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PAROXYSMAL TACHYCARDIA.*

JOSEPH M. PATTON, M.D.

Profesor of Internal Medicine, Chicago Policlinic; Professor of Physical Diagnosis, Medical Department University of Illinois.

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It is not my purpose to undertake a semeiological discussion of the motor disturbances of the heart, but to ask your indulgence for a few moments' consideration of one of the two alterations of the cardiac rhythm which present definite features with sufficient constancy and regularity to have brought them almost within the category of the recognized diseases of the heart, where they probably belong, yet in which the failure, so far, to define their pathologic entity has relegated them to the class of so-called functional disorders of that organ. A full consideration of the semeiotics of these disorders —tachycardia and bradycardia—would involve a discussion of the innervation of the circulatory apparatus and its relation to rhythmic alterations in the heart's action, which would occupy more time than the limits of this paper will allow, as I simply wish to call your attention to some features of the first named of these alterations in the heart's rhythm, as illustrated in a typical instance of paroxysmal tachycardia.

I make premeditated use of the qualification, "paroxysmal," despite Allbutt's solecism—"as one of its (tachycardia's) eminent characteristics is its paroxysmal occurrence the addition of the qualification to its name is superfluous." If we accept his somewhat sarcastic arraignment of the use of the term "tachycardia" to denote various symptomatic states of increased rate of heart action, then we can consistently disclaim the term "paroxysmal." If, however, it is proper to use the term "spasmodic" as indicative of a form of asthma essentially different from other forms of asthmatic manifestations, it is equally appropriate to make use of the qualifying term, "paroxysmal," as indicative of a form of rapid heart essentially different from other forms in that, as described by Nothnagel, it comes on suddenly, lasts a few hours or days, and terminates abruptly. If with Anders we use the term "tachycardia" to express those neurotic instances of increase of the heart-rate such as occur in certain nervous conditions, with blood changes from toxic agencies, shock, fright, etc.; or if we use the term in reference to the symptomatic forms of increased heart-rate from the pressure of tumors from hemorrhage, from softening of the medulla or cord, from paralysis of the vagus due to tumors, aneurysms, or enlarged lymph-glands or from the various reflex causes, the necessity of some special designation for the form under consideration becomes apparent. It is evident that the use of the term "tachycardia" in relation to ordinary symptomatic forms of rapid heart must be more or less pedantic, as illustrated by Anders, who says that tachycardia may occur as a physiologic condition in certain people whose pulse may range from 90 to 100 beats per minute. Such use of the term seems somewhat arbitrary. We see at times, however, instances of a more or less persistent rapid heart in connection with hysteria and other neurotic states where the pulse-rate may be from 120 to 140 or 160, presenting marked variation in rate but not the paroxysmal feature peculiar to essential tachycardia and to which the application of the term "tachycardia" would seem to be justifiable.

In illustration of the striking difference between the clinical manifestations of ordinary forms of symptomatic heart-hurry and essential paroxysmal tachycardia I may cite the following case:

Mrs. M., aged 60 years, came to my office in December, 1898, saying she wished to consult me about her heart. She was a well-preserved woman of medium height, and rather stout, with a general appearance of good health. She stated that she had never been ill, with the exception of the ordinary sicknesses of childhood; that she had always been active and energetic in both domestic and social life, but had been obliged within the last two years to be careful in regard to physical exertion and diet, because of the "spells" with her heart which were becoming more frequent and persistent. She stated that these spells she had had at intervals for several years. At first they were infrequent and of short duration—an hour or two. During the last two years the attacks had become so frequent and persistent as to be present nearly one-third of the time, and lasted from half a day to two days at a time. While she was able to go about and attend to her ordinary duties even during an attack, she realized that she was becoming steadily more and more incapacitated, and this had alarmed her, particularly as she had taken various forms of treatment without any particular benefit.

She stated that she realized when an attack began and when it ended. With the beginning of an attack she felt a slight fluttering of her heart; during the attack she felt nervous and restless, and while conscious that the heart was beating rapidly there was no special feeling of discomfort, and at times she would forget all about it. Usually she slept well, though of late she had difficulty in getting to sleep when the attacks were on. When the attacks ceased she was conscious of a sudden check in the action of the heart and immediately felt relieved as of a nervous strain. She felt exhausted after an attack, in proportion to its length. She stated that she was then suffering from an attack which had begun on the previous day; that she had been down town for several hours before coming to see me and was some-

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what fatigued. I felt her pulse. The artery was not well filled and the pulse was very compressible. The rate was 210 per minute. The heart-beat coincided with the radial pulse. The machine-like regularity of the hearts' action was strikingly characteristic. There was absolutely no variation in the rhythm. The heart sounds were weak and tick-tack in character, the second being, perhaps, a trifle higher in pitch than the first, though the two were remarkably alike in duration and pitch. There was no subjective or objective evidence of palpitation, tremor cordis, or delirium cordis. There were no cardiac murmurs, and the patient was not dyspneic. The visible and palpable area of impulse was somewhat increased in extent and displaced slightly to the left, but was weak and ill-defined. The left border of dulness was slightly displaced to the left. The apex impulse remained in the fifth interspace. The second pulmonic and aortic sounds were not intensified.

The patient was seen at her residence the following morning. She stated that the attack had ceased about an hour before my arrival, and that except for her weakness she felt quite well. Her pulse was 70, perfectly regular, and the heart's action apparently normal.

The patient was under observation for three months during which period the attacks became of longer duration and left her weaker and with increasing dilatation of the heart. Upon one occasion I happened to have my fingers upon her radial pulse when one of the attacks terminated. There was a sudden cessation of the rapidly-running pulse, a very short pause, a strong, well-defined pulsation, followed immediately by a weaker one, and by the time I could apply my ear to the chest-wall of the heart was beating steadily at the rate of 70.

No substantial improvement was obtained by any method of treatment. The attacks increased in frequency and duration until they were on fully half the time. In the latter part of March, 1899, she had an attack lasting over four days. On the morning of the fifth day I found her much exhausted, dyspneic, and slightly cyanotic. There were edematous râles in the base of both lungs; the apex of the heart was outside of the mammilary line; the pulse-rate was 210 per minute but very feeble. It rapidly became imperceptible; the dyspnea and cyanosis increased and she died quietly with no evidence of suffering. A post-mortem examination was not obtained.

Tachycardia paroxysmalis, synchopexia, essential or recurrent tachycardia, heart-hurry, as it has been variously termed, was probably first noted by Catton. Watson, Williamson and others soon followed him. The name "tachycardia" was first used by Gerhardt, and the qualification, "paroxysmal," by Bouveret. Among the best descriptions of the condition are those of Martis and of Herringham. Prœbsting gave a detailed description of tachycardia, and Nothnagel described three cases in 1887. A number of observers subsequently followed with case reports. Some of the earlier observers appear not to have noted the essential features of the typical form, as, for instance, Fraentzel, who speaks of the "terrifying feeling of palpitation" accompanying the attacks.

Etiologically the observations of Œttinger appear to establish some hereditary influence. Males appear to be somewhat more frequently affected than females, and the attacks are most likely to appear between the ages of 30 and 50 years, though they may occur at any age. In seven of the fifty-three cases collected by Herringham the affection began in childhood. H. C. Wood, and Watson Williams have each reported instances of tachycardia in patients over eighty years of age. Various diseases have been described in association with tachycardia, though no etiologic connection has been established. Fright, shock, traumatism and various reflex causes have been associated with the onset of attacks; but the paroxysms generally appear to be, in typical cases, independent of such influences. At the same time, these various influences may unquestionably act as the immediate exciting cause of the paroxysms. Theoretically, the cause has been attributed to either paralysis of the pneumogastric, or to stimulation of the sympathetic nerves. Martis attributed the occurrence of tachycardia to sudden dilatation of the heart. As for disturbance or paralytic inhibition of the vagus, put forth by Tuczek as a cause of tachycardia, none of the results known to follow bulbar disease, pressure on the vagus from tumors or enlarged glands, nor experimental work indicate that such a high rate of action of the heart can be obtained from such sources. Synchronous inhibition of the vagus and stimulation of the accelerators may be admitted as possible causes but this would postulate some temporary bulbar change, so far impossible of demonstration—possibly a bulbospinal neurosis, as suggested by Debove and Boulay. You will recall that Talamon regarded the affection as epileptiform in nature. Perhaps some of our neurologically inclined members will inform us as to what that may mean.

Stimulation of the accelerators to the extent of overcoming vagus control, as suggested by Nothnagel, while favored by the character of the onset and termination of the attacks, is opposed by the total inability to produce any like effect by experimental stimulation. Certainly reflex irritations, which in some cases of tachycardia appear to be definite etiologic factors in the production of individual paroxysms, do not have the inherent power of instituting them. As far as the cardiac ganglia are concerned no definite changes have been demonstrated in them which are associated with tachycardia. Moreover, the researches of Gaskell and others would appear to prove that the ganglia are not sufficiently concerned in the dynamic properties of the heart to produce any such an effect as tachycardia. In regard to the effect of changes in blood-pressure from extensive dilatation of the venous or arterial systems, such alterations in the vascular tracts do not produce such a high rate of heart-beat. In collapse from vasomotor paresis, from hemorrhage, or from the sudden removal of large amounts of serous fluid we do not usually find a pulse-rate above 160-180 per minute. In those cases of rapid heart associated with hysteria and kindred states we find the pulse-rate subsiding during sleep or during the administration of an anesthetic.

Although paroxysmal tachycardia is not associated with any clinically demonstrable disease of the heart, in the six cases which have come to post-mortem there has been shown myocardial disease in three, and if we consider that in those analogous disturbances of cardiac rhythm—tremor cordis and delirium cordi—there is practically always some form of myocardial disease present, we may admit that West's opinion, that the lesion of tachycardia is in the myocardium, is not without some force. Still, the failure to demonstrate some

fault in the nerve-supply of the heart does not prove that such does not exist. The great frequency of myocardial disease and the great infrequency of tachycardia show the latter not to be dependent on the former alone. Nevertheless, myocardial changes may be a necessary, if not a principal, factor in the production of tachycardia, at least so far as modifying the inherent automatic and co-ordinate action of the myocardium is concerned. In a heart-muscle which has undergone changes ordinarily not productive of clinical, or possibly even of pathologic, evidences of disease, a sudden variation of the usual conditions of circulation or of innervation or both might be productive of such manifestations as tachycardia.

In a case recently under treatment, in a woman 57 years old, with moderate arteriosclerosis but with a previous record of good health, a primary attack of angina pectoris instituted a tachycardia wih a pulse-rate of over 200 per minute which continued until her death ten days later. At first there was marked delirium cordis; and pronounced irregularity was a feature until death. The attack was followed by embolic obstruction of the left peroneal artery. There was, probably, in this case, some obstruction of the coronary circulation which caused at once the angina and the tachycardia.

It would appear that under certain unknown conditions of the heart, tachycardia may occur more or less as the result of causes extraneous to the heart itself. The following case may be cited in illustration:

The patient was a male, 50 years old, a carriage builder by occupation. His previous health was good. On one or two occasions he had transient attacks of rapid heart action, but paid no attention to them. His arteries were atheromatous and his heart slightly hypertrophied. In ———, 189—, he was under my care for relapsing typhoid fever. The temperature was never very high, and the pulse rarely above 90, the average pulse-rate being from 70 to 84. There was considerable delirium and marked emaciation. The bowels were alternately constipated and loose. During the sixth week of the fever the pulse had averaged from 70 to 74 per minute and the delirium had been absent. One morning I was sent for about 9 o'clock. I found his pulse-rate 260 per minute, perfectly regular and typical of the pulse-rate of paroxysmal tachycardia. There was no palpitation, no dyspnea, no distress. His mind was perfectly clear. He said that the attack had begun very suddenly about an hour before my arrival, and that while he was conscious of the rapid action of his heart and felt nervous and irritable he was not suffering. I found that on the day before he had eaten considerably more than usual and that his bowels had not moved since early the previous morning. I ordered a saline laxative, this to be followed by an enema. Four hours later I saw him again and found his pulse was steady, regular and beating at 70 per minute. The attack had ceased abruptly two hours previously and shortly after a copious evacuation from his bowels. The patient made a slow but uneventful recovery, and has since been in good health.

This case and the one first cited illustrate typical forms of paroxysmal tachycardia. The more I have considered them the more impressed I have become with the belief that whether there may be involved in the production of the paroxysm, abnormalities of the cerebral cortex, mesocephalon, bulb, vagi, accelerators or cardiac ganglia, or whether anemic areas or eccentric irritations are involved in the production of the attacks, there probably is present some condition of the heart muscle in which temporary interference with its blood-supply (ischemia) renders unstable the inherent power of co-ordinate action and automatic contraction peculiar to the myocardium.

In the morbid anatomy of this affection there is nothing definite to consider. The symptomatology is already sufficiently covered in the recital of the above cases. The essential features are: the sudden onset, the great rapidity of the heart's action, and its machine-like regularity; the absence of palpitation and dyspnea, and the abrupt ending of the paroxysm. Such subjective sensations as pain in the chest, uneasiness, numbness, tingling, or consciousness of motor disturbance of the heart may be present, but usually are not. Indeed their absence is rather one of the differential features between essential and symptomatic tachycardia. Rarely there may be carotid or jugular pulsation, but as a rule these, like dyspnea and cyanosis, are associated only with the cardiac dilatation which betokens the imminence of dissolution. Various symptoms have been detailed in the history of the cases that have been reported, but none of these are peculiar to tachycardia.

The prognosis is unfavorable in recurrent cases, and in all cases is uncertain. Recurrence usually becomes more frequent and the attacks prolonged until fatal dilatation of the heart occurs as in the case first cited. Herringham's statement, that the prognosis depends largely on the frequency and duration of the attacks, is true enough, but his remark, that few patients pass the age of fifty years, is not substantiated by the records. In some instances the attacks have grown more infrequent as the age of the patient advanced.

As to the treatment there is little to say. There being no specific indications, naturally the therapeutic management of these cases must be empirical, aside from the usual means applicable to any abnormal condition of the heart muscle and endocardium, or to any eccentric factors of which observation in the interval of the attacks may indicate some possible causal relationship. All the hygienic and other measures adapted to the therapeutic management of cardiopathic states in general are applicable in this connection; for even if no abnormal condition of the heart can be clinically made out we can not assume that the heart is healthy. The diet and exercise should be adjusted as in other cardiopathies. Eccentric sources of irritation should be searched for, especially in the intestinal tract. Autotoxic conditions should be avoided. During the attacks, if dilatation of the heart is increasing, digitalis should be given cautiously. As a rule it does not influence the pulse-rate for the better and its utility is doubtful. Stimulation of the vagi by pressure or electricity to their cervical portion is recommended, but has utterly failed at my hands. Compression of the chest as recommended by Rosenfeld gave the same result. It may be practiced by the patient, who fixes the feet against the bottom of the bed, applies his arms firmly to the sides of the chest and the forearms to the lower anterior portion of the chest wall; inspires deeply, fixes the glottis and makes strong expiratory efforts while pressing firmly against the chest with his arms.

Massage of the heart through the fourth and fifth interspaces seemed to me to increase the force of the

heart's action but not to cause any change in the rate. Ice-bags to the precordium are recommended, but I have seen no benefit from their use.

In the case first cited, regulation of the diet, intestinal antisepsis and sodium bromid seemed to have a temporary beneficial effect. The attacks themselves were not affected in the least by any means employed. Patients with arteriosclerosis should be kept on moderate, continuous dosage of strychnia and sodium iodid, or, possibly nitrite of sodium, in order that the blood-supply to the heart muscle should be favored as much as possible. Every means should be adopted which is calculated to produce or maintain a better nutritive condition of the myocardium. Even if temporary ischemia of the heart muscle is not concerned in the production of the attack; and granting that no constant form of muscular degeneration or change is recognized as productive of or resultant from the attacks, we still have to confront the therapeutic problem of postponing the period of cardiac dilatation which ends the clinical history of these cases and to that end must bend every effort toward maintaining the integrity of the myocardium.

DISCUSSION.

DR. GEO. W. WEBSTER—We are to be congratulated on having our attention called to one point particularly in this paper, and that is the nature of essential tachycardia. This term has been in use in medical literature for something like 20 years, and recently there has been a tendency on the part of the profession to use the term as a synonym for increased cardiac frequency. This is, as Dr. Patton has said, pedantic, and it should not under any circumstances be so used. There seems to be no unanimity of opinion among authorities in regard to its etiology, its classification, its pathology, or its treatment. Whittaker, for instance, says that it is always a symptom and never a disease. Allbutt, with equal dogmatism, says it is always a disease and not a symptom.

In regard to its cause, some authorities maintain that the disease is in the cardiac ganglia, and there only; others maintain that the disease is a pure neurosis; and still others that it is toxic or reflex. For all of these statements there seem to be reasonable grounds. There are well-authenticated cases of typical paroxysmal tachycardia, where after the removal of a tapeworm, for instance, these attacks have never recurred. Some regard the cause as a myocarditis, or rather as a dilatation of the heart; for instance, Whittaker says that the affection is now regarded as due to a dilatation of the heart; others regard it as a pure neurosis. Similarly, with reference to its pathology authorities are not agreed. It seems to me that we should be very careful about the use of the term "'tachycardia;" we ought to limit it as Dr. Patton has carefully done, using it provisionally to designate those diseases, or, if you choose, those typical recurrent symptom-groups characterized by a sudden onset, where the pulse-rate suddenly jumps the normal to 120, 160, 180, 200, or even 250 or more in the minute; to indicate that the attack is never accompanied by palpitation; that there is perfect rhythm, both of time and of volume; that there is low peripheral resistance and low blood-pressure; that the attacks terminate as suddenly as they begin, and leave no apparent effects beyond a possible slight dilatation and fatigue of the heart, consequent upon the increased amount of work which it has been called upon to perform. If used in this way, as a provisional term, and not simply to indicate heart-hurry in those cases, like exophthalmic goiter, or tabes dorsalis, where there is a constant increase in frequency of pulse, nor as some recent writers use the term, to indicate simply hurry of the heart in such diseases as chronic tuberculosis, such use will serve to facilitate our thinking in regard to tachycardia, and will put no bar in the way of progress in the investigation of its pathology. It should be limited to a definite symptom-group.

DR. EDWARD F. WELLS—The subject of tachycardia is an extremely interesting one, and has been well presented by Dr. Patton in his paper this evening. There can be no doubt that the term, where applied to a morbid entity, should be strictly limited, and that the disease is an essential one. The heart-hurry accompanying toxemia, or that accompanying such a disease as exophthalmic goiter, is entirely different in character from that due to essential tachycardia. I doubt, however, the advantage of limiting the disease definition as closely as has been done by some systematic writers and, incidentally, by Dr. Patton. I believe that recurrence is not necessarily a part of the clinical history of the disease. To be sure, we can never say in any case of tachycardia that the patient may not have had previous attacks, or that subsequent attacks may not occur; but I am inclined to think, as the result of my personal experience, that a single attack or paroxysm of tachycardia, coming on suddenly and stopping suddenly, with great rapidity of the heart's action, without palpitation, but with a sense of precordial discomfort or distress, and without greatly prostrating the patient, is not so very rare, and is really the same disease as that which is known as recurrent paroxysmal tachycardia. I have under observation several patients who have had or are having attacks of heart-hurry, and, as illustrating the points of essential difference of the heart-hurry in the paroxysmal tachycardia under consideration and in tachycardia in some other diseases, I have several tracings (which he exhibited). The first tracing is from a case of exophthalmic goiter in which the pulse was very rapid. It is a characteristic tracing. The next tracing is from a case of intestinal toxemia. The symptoms of toxemia and the heart-hurry came on rapidly, not suddenly. In this case the toxemia and extreme frequency of the pulse was easily and completely relieved. I wish to call your attention now to the tracing from a case of paroxysmal tachycardia, with recurrent attacks, and you will notice that the characteristics differ radically from the other types. These tracings are important in the study of tachycardia and show minute details which can not be recognized by the finger and enable us to leisurely compare them with others. We may not be able to say that obvious or gross disease of the heart is necessarily accompanied by tachycardia, or that tachycardia accompanies any specific organic disease of the heart; still the fact remains that these patients do complain, it may be indefinitely, of their hearts. This patient, a woman, came to me several years ago for the express purpose of having her heart examined. At the time she was 40 years of age and there was no history of anything more than a vague sense of precordial distress; certainly no mention was made of rapidity of the heart. I took numerous tracings early in the history of the case, and one quite recently. The ordinary normal character of the pulse is shown. There are no heart murmurs present. I have seen her several times during or immediately following the attacks of tachycardia, and at these times the right ventricle is evidently dilated. At other times when in normal health there is no evidence of enlargement of the heart.

As illustrating another feature I wish to give briefly the history of a woman 65 years of age, who has been under my observation for some time, and in whose case there was present, in 1895, a heart murmur. I do not recall the nature of the heart murmur, but the heart was regular in its action, as is well shown in one of these tracings (exhibiting tracing). This woman one morning had some discomfort in the region of the heart. She had been entertaining some visitors; took her morning carriage ride, but in the afternoon she sent for me, saying she was not feeling well. She was up and about, but somewhat restless, and complained of a slight uncomfortable sensation in the cardiac region. Her pulse was beating more than 206 times per minute, as shown in this sphygmogram; the other tracings show the character of the pulse before and after the paroxysm. The beginning of the attack was sudden; the end was equally sudden, and there has been no recurrence and no history of an previous attack.

Another woman, 50 years of age, gave a history of frequent headaches and jaundice. Cardiac arrhythmia had been noted some years before, and is yet present. I show you the tracings

in this case before and during an attack of heart-hurry, and immediately following. I have tracings in which the irregularity of the heart is shown. The attack in this case followed an attempt to ride a bicycle, but there was a history of some previous attacks which were very similar, so far as sensations were concerned, but no account had been made of the pulse.

The hurry of the heart accompanying hysteria is well shown in this tracing (exhibiting tracing), although it is not so marked as in some other cases I have seen. In hysterical cases I think the rule is for the pulse to gradually become more rapid.

Several years ago I saw a gentleman, 35 years of age, who, during satisfactory convalescence from typhoid fever, picked up the nurse's record, and in looking over it thought it would be a good plan to count his own pulse. He did so, and found it reached 100, although during the attack of typhoid fever his pulse did not exceed 90. He called his wife and said there was something the matter with him, and when I saw him later his heart was beating 180 times per minute, and his face was bathed in cold perspiration—clearly a nervous state. A hypodermic injection of morphia relieved the condition, likewise his anxiety.

Repeating, I wish to state that we may have a tachycardia that is identical with paroxysmal tachycardia without recurrence, and these cases should be classed with those of essential tachycardia. I simply object to the term "recurrent" as a necessary part of the title and applicable to this affection.

DR. GEO. W. MCCASKEY, of Fort Wayne, Ind.—In thinking over the anatomico-physiologic mechanism of the circulation during the reading of this interesting paper, it has occurred to me that there are four possible causes for the condition we are discussing: 1, lesions in the central nervous system; 2, lesions in the intracardiac nervous mechanism; 3, lesions in the peripheral nervous system in the way of so-called reflex irritations; 4, disturbances in the blood itself. The opinion is held by some that these attacks are due to some toxic influence; but in the cases described by Dr. Patton, it seems to me that the toxic origin is entirely out of the question, unless we can assume that the tachycardia is brought about by some sort of cumulative or explosive action upon the nervous mechanism of the heart—which is perhaps possible. It seems clear to me that the essential condition at the time of these attacks must reside in the nervous system. I am not prepared to discuss the three other possibilities, but simply mention them to say that I am inclined to think all of them apply to different cases of paroxysmal tachycardia, the pathology of which varies greatly in different cases.

I would call attention to one condition which has been referred to by a previous speaker, and which may possibly explain some of the cases, and that is the sudden alteration in the arterial tension. At the present time I am studying a case very carefully which was referred to me by a colleague. The patient has had sudden attacks of bradycardia, followed by tachycardia. These attacks are periodic in character; they are not produced by exercise. The patient can lift weights or run upstairs without causing attacks, and upon auscultation and percussion there is no evidence of any cardiac disturbance. I believe the case is one of neuropathic angina, so-called by Landouzy. The pulse was as low as 25 or 30 on some occasions. The attack of bradycardia was doubtless due to some unknown cause which produced increased arterial tension. The attacks were regularly periodic—a phenomenon which does not pertain to true angina. I prescribed nitrite of amyl. She crushed one of the capsules, inhaled it, and the first inspiration aborted the attack, and this has been the result ever since. Here is an instance where a sudden alteration in arterial tension produced bradycardia which, when the nerve-centers became apparently exhausted, was followed by lowered arterial tension and tachycardia. It still remains for us to explain the lowered arterial tension in such cases.

DR. N. S. DAVIS, JR.—The tracings of Dr. Wells illustrate well a feature which I have observed in my own practice. It is the effect of respiration upon the heart's action, the production of a noticeable wave in the respiratory line of the tracing. The commoner causes of a rapid heart's action do not cause this. But in essential tachycardia it has been present in all cases which have come under my notice. Essential tachycardia is described as a non-structural disease of the heart, and it is usually supposed not to be associated with valvular disease. There is no reason why it should not be. The following case illustrates the possible coincidence of both conditions. This case I have seen several times during the last two years. The patient, who comes from Wisconsin, has had many attacks of what appear to be in every respect attacks of essential tachycardia. The attacks have recurred very many times. He has a well but not perfectly compensated chronic valvular disease of the heart. The attacks of tachycardia come on without any discoverable cause, and they cease with the suddenness which is peculiar to essential tachycardia. I consider it a case of chronic valvular disease of the heart complicated by the phenomenon of recurrent essential tachycardia.

DR. PATTON—In regard to the remarks of Dr. Webster as to the unqualified use of the term "tachycardia," he misunderstood me slightly. I did not intend to make the point that the term "tachycardia" should not be used except in association with essential tachycardia. We must have some term by which we can describe the heart's action in such cases as we have associated with exophthalmic goiter, hysteria, etc. Where the pulse-rate is 200 or over I do not know how we can avoid the use of the term "tachycardia." If we do not use it we have to use a word which will mean the same thing. I objected to the term as it is used by Anders. The use of the qualifying term "paroxysmal" is not only justified but necessary in relation to distinct paroxysmal attacks. They are essentially different from the symptomatic forms. We ought not to use the unqualified term "tachycardia" to cover the whole field.

In regard to the case of tachycardia mentioned by Dr. Webster as being associated with tapeworm, it is quite possible, yet I do not believe it proves that the typical attack was due solely to the tapeworm. There must be some cardiac disturbance which will allow of the manifestation of such a condition. We have tapeworms and tapeworms, and we rarely see attacks of tachycardia associated with the existence or presence of tapeworm.

In regard to Dr. Wells' objection to the use of the term "recurrent," he will find in reading my paper that I have not used it at all except in connection with various other terms to describe the disease. It has not been used as one of the essential features of the attack. I have merely used the term "paroxysmal" as indicative of an attack that comes on as a paroxysm, continues for an definite period, ceases suddenly, and that may or may not be recurrent.

With reference to the causes mentioned by Dr. McCaskey, he has, of course, given the principal channels through which such an effect might occur.

In regard to vasomotor changes, sudden variation in blood-pressure, etc., this is a theory to which Allbutt is especially partial, but he has not been able to find sufficient reason to sustain it. From extensive dilatation of the vessels in the splanchnic area we do not get typical attacks of tachycardia. We get a rapid pulse-rate. I saw a man in collapse the other day from vasomotor paresis; he came very near dying. I saw another man who died from vasomotor paresis. The heart-rate in neither of these cases was above 190; one was 175, and the other 190. Fatal vasomotor paresis does not cause a pulse-rate of over 200; as a rule, it is seldom that point is reached. It comes on gradually as the case develops. I do not think we can explain essential paroxysmal tachycardia by vasomotor paresis, or through changes in blood-pressure due to vasomotor influences, because they require more time for their development; they do not recover so abruptly; there is more variation in the rhythm and in the force of the pulse. There is certainly a variation in the force, if not in the rhythm, in all cases of rapid heart due to nervous causes.

I was much interested in the experimental work of Dr. Matthews, and, as far as I can see that they have application to this discussion, they would bear out the theory that typical essential tachycardia is due to some intracardiac cause. It has a sudden beginning, a sudden cessation, irrespective of the blood-pressure. The mechanical rate at which the heart works

and the altered rhythm are peculiar features of this kind of an attack, for, if arrhythmia be present it is likely to take the form of allorrhythmia. In the case cited in the paper, where a woman died during an atypical attack of tachycardia, the attack began as an angina; there was an allorrhythmic condition which would be very much like what Dr. Matthews has produced in his experimental work on the heart, the regular departure and regular resumption of certain rates. This is not usually seen in attacks of essential tachycardia, but its occurrence may take place in connection with tachycardia under certain conditions of circulation in the heart muscle.

As far as the cause is concerned, the possible influence of vasomotor changes, central nervous condition, abnormalities of the cardiac ganglion, etc., must be borne in mind. We must have something wrong with the cardiac muscle. We have cardiac muscular disease in practically all of these cases, but there is something else; whether there is a change in the blood-pressure in the heart muscle, resulting in a temporary ischemia, or whether the condition is due to some poisoning of heart muscle, I do not know; but I am convinced that there is something of that kind aside from extraneous causes affecting the heart muscle.

The case cited by Dr. Davis is interesting from a clinical standpoint. Practically all authorities are agreed that left-sided valvular disease may be associated with attacks of essential tachycardia. The valvular disease is not regarded in any sense as a cause, and should not be, except in so far that it might result in myocardial changes which would render the heart more susceptible to the other unknown causes which result in the paroxysmal. It is interesting, however, to have a record of the association of the two conditions.

EXPERIMENTAL AND CLINICAL NOTES ON THE SUBARACHNOID SPACE.*

DUDLEY TAIT, M.D., AND GUIDO CAGLIERI, M.D.
SAN FRANCISCO, CAL.

From the exclusive domain of anatomy and physiology the meningeal route has made its way through the work of clinicians, to the sphere of practical medicine and surgery. To Quincke is due the credit of having demonstarted the innocuousness of subarachnoid lumbar puncture, its facility of execution, and the harmlessness of the withdrawal of a considerable amount of cerebrospinal fluid. Soon after Quincke made his original communication concerning "lumbal puncture," scores of physicians, in their enthusiasm for this new mode of relieving intradural pressure, predicted the curability of many diseases of the cerebrospinal system, previously deemed hopeless. In epilepsy, tuberculous meningitis and general paralysis many expected wonderful results. The German school, for example, singularly oblivious to the diffuse and deep cellular lesions present in tuberculosis of the meninges —the best known of all meningeal infections—adopted lumbar puncture as a logical and valuable therapeutic measure. A few doubtful cases of temporary amelioration in tuberculous meningitis were first reported. Then followed a long series of dismal failures. To-day, no one seriously contends that meningitis, especially of the tuberculous variety, can be cured by simply relieving pressure—decompression—and when we recall the extent of the bacillary lesions, the constant morbid changes in the nerve tissue—cerebral and medullary—subjacent to the meninges, and particularly when we consider the anatomy of the subarachnoid space, it seems almost incomprehensible that eminent surgeons in Europe and America should have proposed drainage of the lateral ventricles as a means of combating tuberculous meningitis. This procedure, first suggested by Wernicke (1881) and Zenner (1886), and adopted later by von Bergmann (1887), Keen (1886) and others, is not in accordance with either the clinical or the pathologic findings, as it is well established that the softening noted post-mortem in cases of tuberculous meningitis is due principally to an inflammatory process, and not to increased intraventricular pressure, which in reality plays a secondary part in the production of coma, and the failure of the cardio-respiratory action. Some physicians have argued from the analogy of tuberculous meningitis to tuberculous peritonitis that drainage ought to do good in the former condition since it does in the latter. These authorities forget that the lesions under discussion are very different, and consequently there is no real analogy to guide us.

In the present communication we do not deem it necessary to review the subject from a historic or biographic standpoint, except to establish beyond possible controversy the question of priority in cocain analgesia by the spinal route. To an American, J. Leonard Corning,[1] belongs the credit of having first suggested and carried out, both in animals and in the human subject, spinal analgesia by means of cocain injected into the lower dorsal region. Corning,[2] although his reasoning was manifestly unsound regarding the mode of action of the analgesic substance, nevertheless succeeded in obtaining analgesia of the lower limbs, scrotum, penis and lumbar regions, both in the dog and in man. He also mentioned the possibilities of this method of analgesia in genito-urinary and other branches of surgery.

Ziemssen (1893) was the first to suggest injections of diverse medicaments by lumbar puncture. Sicard was the first, however, to carry out this plan. This clever investigator began his studies in this domain as early as 1897. His first communication to the Biological Society of Paris was made in April, 1898, whereas Jacob, working in the laboratory of Professor Leyden, of Berlin, published his first report a month later. Sicard was also the first to use tetanus antitoxin and saline solution in the subarachnoid space. While great credit is unquestionably due Bier for calling attention to the analgesic properties of cocain by lumbar puncture, it should be remembered that his work comprised little more than the perfecting of Corning's technique in accordance with Sicard's experimental studies. Councilman, Mallory, and Wright (1898), of Boston, in their remarkable report on cerebrospinal meningitis, were among the first to utilize the subarachnoid space for the bacteriologic study of meningeal infections.

A review of general literature shows that all are agreed on the diagnostic value of the study of cerebrospinal fluid. It is indispensable in cases of meningitis, and may

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1. Intradermic infiltration of cocain was used by Reclus in several hundred operations, minor and capital, before Schleich advocated this method of analgesia. The method of cocainization known in Europe as Kummer's—in which the field of operation is shut off by means of an elastic band—was made known and used by Corning as early as 1884. E. Hoffman (Deutsche Med. Woch., 1886) attributed "the essential advancement in the application of cocain for local anesthetic purposes" to Corning's discovery. Harvey Cushing (Annals of Surgery, Jan., 1900) erroneously states that Corning introduced cocainization of main nerve trunks. This method was the result of experiments made in 1886 by Feinberg, Kochs and U. Mosso. Krugius of Helsingfors, after whom the method is named, was the first (1894) to make use of these experiments. Cushing's error is probably due to the fact that Koch's work was reviewed (N. Y. Med. Jour., Jan. 22, 1897) by Corning.

2. New York Med. Jour., Oct. 31, 1885.

render valuable assistance in the differentiation of cerebral lesions and neoplasms, as is well illustrated by a case of cerebral actinomycosis correctly diagnosed by Monod and Sicard. In tuberculous meningitis, especially in circumscribed tubercles, the bacillus is found, by lumbar puncture, in 25 per cent. of the cases, according to the statistics of Leuhartz and Stadelmann.

The present communication is but a résumé of the work which has engaged our attention during several months. In the study of the subarachnoid space we have endeavored to elucidate certain doubtful points and have sought to make some practical deductions therefrom.

The subarachnoid space may be reached by several routes: 1. By trephining the skull. 2. The atlo-occipital route followed by Magendie in demonstrating the constant presence of cerebrospinal fluid. 3. The dorsal route, with or without laminectomy. 4. The sacro-lumbar route. 5.Through the central spinal canal. The second, third, and fifth routes are seldom used, on account of the difficulty and danger encountered. In six out of seven cadavers we found the dorsal route accessible as high as the sixth space, without preliminary laminectomy. 6. The cervical route.

We found the sixth cervical space a sure and extremely easy route in the human being. We first tried this route on the cadaver, by injecting colored fluids, without previously having incised the skin, and obtained uniformly satisfactory results. The route most commonly adopted is the lumbar or sacrolumbar. We find the latter preferable in animals, and the third lumbar space the most practical in the human being.

The technique of lumbar puncture is well known, and is usually described in text-books. We desire, nevertheless, to call attention to a few points of interest, if not of value: 1. The distance to be traversed by the point of the needle is generally given as 7 to 8 cm. We have never found the distance so great as 8 cm., even in obese patients, but most invariably 6.5 to 7 cm. In two cases of adults, the distance was 5.5 cm. 2. The smaller the caliber of the needle, the slower, and therefore the safer, the procedure. The rapid introduction of 2 c.c. of liquid, in one of our patients produced considerable shock. 3. By first withdrawing a small amount of cerebrospinal fluid, one is certain of making the injection within the canal. 4. Slow aspiration of the fluid, contrary to the opinion of German authorities, does not induce any untoward symptoms. 5. Lumbar puncture may be rendered painless, and extremely easy, by injecting a few drops of Schleich's mixture into the skin and subjacent soft parts. By this simple plan, the sudden start of the patient will be prevented, and the relations of the osseous parts will thus remain undisturbed.

CEREBROSPINAL FLUID.

In this part of our investigations, a large unmber of animals—guinea-pigs, rabbits, cats, dogs, and even horses were used for experimental purposes, and a series of cadavers served to acquaint us with the intricacies of the subarachnoid space. Whenever feasible, the technique adopted in animals was as near as possible that followed in the human being, without preliminary laminectomy. Several patients subjected to lumbar puncture for therapeutic purposes were utilized to clear up doubtful points relating to the physiology of the subarachnoid space, and furnished valuable data. The cerebrospinal fluid resembles no other organic fluid. Our knowledge of its origin and mode of secretion and resorption is very incomplete. Anatomists compare the subarachnoid space to a serous cavity, to an immense lymph sac into which empty the cerebrospinal perivascular lymphatic vessels. Hence the important rôle ascribed to the lymphatics in the evolution of infectious meningitis. Against this classic opinion may be cited a long series of facts which compel us to change most radically our conception of the cerebrospinal fluid, its nature and rôle in the various infections. The normal cerebrospinal fluid possesses none of the chemical properties of lymph. It contains no histologic elements, no albumin, no leucocytes, no red corpuscles, no fibrogenous factors, nor fibrin ferment. In only one of our cases, which had been previously subjected to an injection of iodid of potassium, did we find a few leucocytes. Widal and Sicard demonstrated that in the course of typhoid infection or immunization, the cerebrospinal fluid does not possess agglutinating and preventive properties, in contradistinction to the secretions of serous membranes—peritoneum and pleura. Sicard showed that, unlike blood, the cerebrospinal fluid does not coagulate the non-spontaneously coagulating organic liquids, hydrocele fluid, for example. It is an excellent medium for the preservation of leucocytes, the latter retaining their ameboid movements and chemiotaxic properties. It only dissolves the red corpuscles after considerable time—*in vitro*. Artificial—medicinal—increase of arterial pressure does not augment the secretion of cerebrospinal fluid. On the contrary, direct increase of pressure by intravenous injection of saline solution, produces a noticeable increase, as the following experiment goes to prove: In a dog of 20 kilos, a fine needle was introduced in the lumbar subarachnoid space. After 10 c.c. had escaped, the fluid flowed very slowly—one drop every two seconds. 200 c.c. of salt solution was then injected into the femoral vein. The flow of cerebrospinal fluid showed an increase within ten minutes. In a series of patients we made lumbar punctures after having given by mouth or subcutaneously, repeated doses of salicylates, antipyrin, cyanid of mercury and potassium iodid and in no case was the drug found in the cerebrospinal fluid; whereas, urinary analysis invariably gave a positive result. In a dog of 15 kilos an intravenous injection of 5 c.c. of 1 per cent. solution of mercuric cyanid caused death within three minutes. Even under these exceptional circumstances, the cerebrospinal fluid showed no trace of the toxic substances.

On the other hand absorption and elimination occur when chemical substances are injected directly into the subarachnoid space. This was confirmed by experiments in animals and also in our work on man.

These facts prove conclusively that the osmotic current exists in only one direction: *there is exosmosis, but no endosmosis.* (Sicard.)

Considerable knowledge may be derived from the careful study of the mode of diffusion of the cerebrospinal fluid, under various conditions. In our work we employed insoluble colored mixtures, which enabled us to note with accuracy and facility both the microscopic and the macroscopic results in the different regions involved.

Briefly stated, the plan pursued was as follows: After having located accurately the various landmarks, a fine needle was introduced into the subarachnoid space of

the lumbar region, and a mixture of carmin and saline solution, or a dilution of common washing blue—ferrocyanid and ferricyanid—injected, in variable quantities, with or without pressure, according to the object of the experiment. The results were as follows: When injected without pressure, the colored fluid stains the space at the point of injection, and then diffuses in all directions, ascending and descending, following the meningeal prolongations along the spinal nerves, to the intravertebral foramina, where it stops abruptly.

The extent and rapidity of diffusion are influenced by several factors; the amount, composition, density of the liquid, and principally the pressure under which the liquid is injected. If 1 c.c. of the blue mixture be slowly injected into a rabbit weighing 900 grams, it ascends rapidly, and if the animal be killed after ten hours, the colored fluid will be found around the medulla oblongata, and at the base of the brain. If the same amount of colored fluid be injected under considerable pressure, and the animal sacrificed after twenty-four hours, the fluid will be found over a much more extensive area; diffusing from the spinal subarachnoid space through the foramen of Magendie to the fourth ventricle, through the *iter a tertic* to the third ventricle, and finally to the cortex of the brain. We found that when 5 c.c. of the colored fluid was injected under great pressure in the lumbar space, the diffusion occurred instantaneously, and the color of the animal's eye recalled, in certain cases, the substance used.

Example illustrating the course pursued by the fluid from lumbar space to cortex of the brain: Rabbit, 850 grams. Preliminary trephining of the skull in the temporal region; injection of 10 c.c. of blue mixture in the lumbar space; time occupied, three minutes. After 2 c.c. had been injected the brain bulged through the trephined opening, and finally burst, the colored fluid escaping through the rent. Death occurred four minutes later. The inverse experiment was made by injecting the fluid directly into the lateral ventricles, but has not as yet given definite results. Improved technique will undoubtedly confirm the facts noted above. Our best specimens were obtained by means of injections made under a considerable pressure, death in some cases ensuing during, or shortly after the operation.

Post-Mortem Findings.—The necropsies of a long list of rabbits so treated showed the following conditions: The pia-arachnoid is colored in its entire course along the cord and brain, continuing along the sheath of the auditory, facial and optic nerves, and also following the prolongations of the olfactory through the cribriform plate of the ethmoid. On the optic nerves, the stain follows the meningeal sheath and generally stops at the junction with the sclerotic. In several of our specimens, however, the colored material followed a course similar—inversely—to that of the diplococcus in some cases of cerebrospinal meningitis, i. e., involved the sclerotic, choroid, papilla, and retina. We have never found the cornea stained. Microscopic sections of the brain and cord show the course followed by the colored fluid and its relations to the perivascular sheath. In several of the forced injections the colored fluid was found in the lungs, and from numerous necropsies we satisfied ourselves that it had escaped from the subarachnoid space, by the blood-stream, thus invalidating the views of Foster, who describes the escape of cerebrospinal fluid as occurring along the tubular prolongations of the pial membranes that accompany the cranial and spinal nerves to the general lymphatics.

The study of the numerous specimens mentioned above is of considerable interest in reference to the origin and evolution of meningeal infections. For instance, they explain very lucidly how tubercle bacilli, which are so frequently found in the tonsils, adenoids and nose, may easily reach the subarachnoid space, independently of the lymphatics, through the cribriform plate of the ethmoid, or the aqueductus Fallopii. The part played by the cerebrospinal fluid in the dissemination of the agent of infection is also made very clear. The same observation holds good in regard to infective lesions involving the cavities contiguous to the subarachnoid space—eye and ear. Another fact of great pathologic importance noted by Sicard is the insignificant rôle of the lymphatics in the origin of meningeal infections. As Sicard remarks, it is difficult to understand by what process the tubercle bacillus, escaping from a cervical or mediastinal gland can follow a retrograde course to the cerebral perivascular lymphatics. On the contrary, infections of hematogenous origin can easily occur, as Sicard's cases conclusively prove.

EXPERIMENTAL THERAPEUTICS AND PRACTICAL DEDUCTIONS.

The action of a drug varies with the route through which it is introduced into the body. Without apparent effect, when given by the mouth or subcutaneously, some substances, chemical or microbic, administered in like doses by the intravenous route, produce serious or even fatal effects. The intracerebral route, as was well illustrated by the interesting studies of Roux and Borel, and by Lesné and Sicard, requires a smaller dose to produce a fatal effect than any other route. The subarachnoid route occupies a position midway between the intracerebral and the intravenous routes (Sicard).

The difference in action of drugs, according to the route employed, can not be ascribed entirely to the degree of rapidity of its absorption and elimination. The tissue involved plays an undoubtedly important part. Each tissue reacts in a distinct manner. In regard to the brain it has been sugggested that the compresion and traumatism incidental to the intracerebral injections may explain in part the difference in effect, but Widal, Lesné and Sicard have proved that large quantities of saline solution can be injected into the brain without causing damage. Furthermore, intracerebral injections of tetanus antitoxin have proved to be harmless and nonproductive of appreciable lesions. These assertions were fully verified in the necropsy of a case of tetanus which we reported recently at the California Academy of Medicine.

In the following notes we relate our experience, in animals and the human being, with the subarachnoid space viewed as a therapeutic route. We sought to determine the degree of tolerance of this space for various toxic and non-toxic substances, some of which had not been used heretofore by this route, and to ascertain the action of said substances on the subjacent normal or pathologic nerve tissue.

In animals the drugs used were cocain, iodid of potassium, and cyanid of mercury.

Cocain.—In a dog of 10 kilos we injected, in the lumbar space, 1 c.c. of a 1 per cent. solution of cocain. Within three minutes, analgesia was noted on the lower limbs. At the expiration of five minutes complete analgesia—superficial and deep—was detected over the entire surface of the body, ears, nose and mouth. The animal presented a semiparetic condition of the hind legs for thirty minutes and then ran about as

usual. The duration of analgesia was one hour and ten minutes. In a dog of 32 kilos, we injected rapidly, in the lumbar space, 2.5 c.c. of a 1 per cent. solution of cocain. Three minutes later analgesia was noted over the entire body, as in the previous experiment. The animal was greatly depressed, vomited, and was paralyzed in the hind legs. The paralytic condition ceased after the second day.

Mercury cyanid.—In a dog of 9 kilos, we injected 2 c.c. of a 1 per cent. solution. No pain was noted; mild paraplegia lasted fifteen minutes.

Iodid of potassium.—Our experiments with this drug were made with doses too small for any local effect. We found that to be of practical use by lumbar puncture, iodid of potassium must be considerably diluted. The saturated solution invariably produced most intense and prolonged pain.

INJECTIONS IN THE HUMAN BEING.

1. *By the cervical route.*—Remembering the innocuousness of intracerebral injections, and judging from the results of a series of punctures of the cord in animals, we inferred that the slight traumatism produced by the needle would not be followed by any untoward symptoms.

A. C., aged 49, had very painful chronic gonorrheal arthritis of the left knee and right wrist. We injected 1.5 c.c. of a 1 per cent. solution of cocain in the sixth cervical space, at a point .5 cm. from the median line. Eight minutes later, analgesia was noted from the toes to the level of the thyroid. On the limbs the analgesia was both superficial and deep. We were thus able to manipulate both of the diseased joints without inducing pain. Analgesia ceased within eight minutes.

A. L., aged 42, had rectal fistula and axillary adenitis. We injected 1 c.c. of a .5 per cent. solution of cocain, in the sixth cervical space. Fifteen minutes later we noticed very slight analgesia extending over the chest. This disappeared within five minutes. In neither of these two cases were there any disagreeable consequences. The procedure was painless. The second patient thirty minutes afterward walked a mile.

The third case was the same patient as in the second instance, and we injected, in the sixth cervical space, 3.5 c.c. of a .5 per cent. solution of cocain. The patient complained of a sharp pain in the left arm during the introduction of the needle. Cephalalgia, a feeling of intense heat over the entire body, copious perspiration and slight vomiting followed almost immediately. The pulse, temperature, respiration, and pupils remained unchanged. There was no analgesia even after one hour and twenty-five minutes. The patient then walked home—one mile—and, on the following day, he complained of slight headache and weakness in the legs. On the third day his condition was normal.

All of these patients were examined several weeks after the injection and found free from any possible complication.

2. *By the lumbar route.*—

I. T., aged 43, suffered from syphilitic myelitis, and was treated with a .8 c.c. injection of saturated solution of iodid of potassium, after we had withdrawn 1 c.c. of cerebrospinal fluid. Intense pain and burning were experienced immediately in both feet. Shortly afterward these symptoms were noted in the thighs, and the patient urinated involuntarily. The painful phenomena lasted six hours. The same patient subsequently received, by lumbar puncture, an injection of 3 c.c. of a 1 per cent. solution of cyanid of mercury. Nothing was noted until the fifth hour, which ushered in numbness and tingling of the lower limbs. Five hours later the patient had a gastric crisis, of greater severity than any previously experienced. No apparent amelioration resulted from the injections in this case. The gastric crises are now more frequent than formerly.

Subarachnoid injections of cocain were made in a series of cases requiring surgical intervention.

M. D., aged 54, suffering with necrosis of tibia, on Oct. 26, 1899, was injected with 1 c.c. of a .75 per cent. solution of cocain. No analgesia was noted before thirty-five minutes. Analgesia, both superficial and deep, was then well marked in the lower limbs. Osteotomy of the tibia was performed without causing either pain or discomfort. There were no unpleasant after-effects. Analgesia ceased after forty minutes.

O. L. had a pelvirectal fistula. We injected 1 c.c. of a .5 per cent. solution of cocain and no analgesia followed. Two hours later the patient complained of tingling and numbness in the legs. Investigation showed that the cocain solution was very old and had been boiled many times.

M. M., aged 26, had acute osteomyelitis of the tibia. We injected 1 c.c. of a 1 per cent. solution of cocain. Analgesia was first noted after twenty-five minutes. The patient also lost the muscular sense in the lower limbs. Amputation was made through the condyles after a thorough exploration of the knee-joint. No pain was noticed except when the popliteal nerve was pinched. The patient then said he felt the instrument but did not complain. The duration of the operation was thirty minutes, with no after-effects. Analgesia lasted fifty-five minutes.

M. U., aged 32, had a urethral fistula—membranous portion. We injected 1.5 c.c. of a .5 per cent. solution of cocain after having withdrawn 5 c.c. of cerebrospinal fluid. No analgesia was noted. The solution used in this case was not fresh, and had been boiled by mistake for thirty minutes.

M. L., aged 48, had sarcoma of the uterus. We injected 1.5 c.c. of a 1 per cent. solution of cocain, after having withdrawn 1 c.c. of liquid. Analgesia of the right leg was noted after eighteen, and of both legs after twenty-five minutes. There was no analgesia of the clitoris after thirty minutes, when vaginal hysterectomy was performed. Vaginal incision with the Paquelin cautery was painless. Traction on the broad ligaments caused very slight pain. Section of th broad ligaments and extraction of the left ovary proved painless. The pressure of the clamp was not noticed by the patient during or after the operation. The latter lasted twenty minutes. The analgesia had then exended as high as the clavicles; the patient neither felt the puncture for hypodermoclysis nor was discommoded in the least by the consequent distension; she complained of the noise of the instruments. There were no unpleasant after-effects. Analgesia lasted one hour and ten minutes, and the patient had her usual liquid diet during the same afternoon. The clamps were removed after forty-eight hours.

M. N., aged 40, suffered with a tuberculous knee. We injected 1.5 c.c. of a 1 per cent. solution of cocain, after having withdrawn 3 c.c. of fluid. Analgesia was noted in both legs after twelve minutes. After the usual transverse incision for resection of the knee, and a most thorough exploration of the bones and soft parts, a condition was revealed which contraindicated resection. Consequently, the wound was closed, and the patient informed of the necessity of an amputation. No pain was noted at any time during the operation, which lasted fifteen minutes. The analgesia continued one hour and five minutes. The patient complained of slight nausea shortly afterward, but this ceased rapidly. Death occurred two and one-half months later, from general tuberculosis. Necropsy showed normal cord and meninges in the lumbar region.

M.M., aged 26, had inguinal hernia, and was injected with 2 c.c. of a .5 per cent. solution of cocain. Five minutes later analgesia was noted in both legs. The operation—a modified Bassini—was begun one minute later. The skin incision was painless, but some discomfort was noted during the incision of the fascia of the oblique, and the dissection of the sac from the cord. The patient was rendered nervous by the noise of the instruments. The resection of 15 cm. of omentum was painless. The upper part of the deep layer of sutures caused some pain, but the lower part proved almost painless. The suturing of the skin was not altogether painless. No troublesome after-effects occurred. In this case the cocain was diluted with the intention of increasing its diffusion; the solution was, however, too weak.

M. L. had necrosis of tibia, and we injected 1.5 c.c. of a 1 per cent. solution of cocain after having withdrawn 1.5 c.c. cerebrospinal fluid. Analgesia was noted after five minutes. Exploration and curetting began immediately. No pain was

experienced, and no after-effects. This patient had collapsed under chloroform and also under ether anesthesia on former occasions.

We have endeavored to apply subarachnoid injections of cocain to obstetrics but we reserve this part of our work for further study. In the study of cocain we found that its local action was in an inverse proportion to its degree of dilution, and that the diffusibility increased in proportion to the amount of the liquid injected. Our experience teaches us that the disagreeable after-effects of subarachnoid injections of cocain are, in part, due to the sudden increase of pressure, and may be avoided by the preliminary extraction of a small amount of fluid, and by making the injection slowly. The amount of cocain is also a factor of importance. With more than 1.50 c.c. of 1 per cent. solution, or more than 1 c.c. of a 1.5 per cent. solution of cocain, we generally noted more nausea, headache and weakness. Toxic symptoms occur in the subarachnoid method in very much the same manner as in the intradermic method of cocainization. In the search for substances less toxic than cocain, we considered eucain and nirvanin. The former, in animals, seemed to differ but little from cocain. Nirvanin, even in a 5 per cent. solution, used subcutaneously, proved less toxic than cocain, but only slightly diffusible. The analgesia induced is less pronounced and disappears more rapidly than that caused by cocain. Schleich's mixture is valueless for subarachnoid use.

CONCLUSIONS.

1. To the already known practical routes leading to the subarachnoid space, we propose to add the "low cervical"—in the sixth cervical space—which we find both easy and safe.

2. The cerebrospinal fluid possesses none of the properties of lymph.

3. Contrary to the classic opinion, the cerebral perivascular lymphatic sheaths do not empty into the subarachnoid space. (Sicard.)

4. Liquids injected by lumbar puncture diffuse rapidly toward the different cavities of the brain, and subsequently reach the cortex.

5. The difference in osmotic currents in the cerebrospinal fluid—presence of exosmosis and absence of endosmosis—in addition to the protection afforded by the perivascular lymphatic sheaths, explains the rarity of infection of the cerebrospinal fluid in the course of generalized blood infections and also the gravity of primary infections of the cerebrospinal fluid. (Sicard.)

6. Direct intramedullary medication is feasible and deserving of further trial.

7. Subarachnoid injections of cocain are devoid of danger if made with certain precautions. The solution should be freshly prepared and injected slowly at a temperature of 37 C. and never in a greater quantity than 3 c.c.

8. The extent and duration of the analgesia thus induced is generally in direct proportion to the amount of drug injected. Analgesia is noted in some cases as early as five minutes, after the injection, and in others, for unknown reasons, as late as thirty-five minutes. Its duration is sufficient for the performance of all operations on the lower limbs and pelvis, and may be sufficient to be of service in obstetrics.

9. The disagreeable effects—headache and vomiting—sometimes noted after these injections, are partly due to the sudden increase of pressure in the subarachnoid space—too rapid diffusion toward the brain—and principally to the amount of cocain used. These post-operative symptoms are never alarming or lasting. They recall the effects of intradermic injections of cocain, and never resemble in severity the symptoms so frequently observed during and after chloroform or ether anesthesia.

10. One c.c. of a 1 per cent. solution of cocain injected slowly is generally sufficient for all practical purposes, and is not followed by untoward symptoms.

11. For obvious reasons, it is a good plan to withdraw a small amount of cerebrospinal fluid prior to making an injection.

12. To the careful surgeon, who aims to gradually divorce himself from the dangers of general anesthesia, and the limitations of superficial analgesia, spinal analgesia, may, under certain exceptional conditions, prove of signal service, and it behooves us to herald abroad the fact that this progressive step was made by a modest American surgeon—J. Leonard Corning.

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THE SURGERY OF BILIARY CALCULI.*

WILLIAM D. HAGGARD, JR., M.D.

Professor of Gynecology and Abdominal Surgery, University of the South, (Sewanee); Associate Professor of Gynecology, Medical Department University of Tennessee; Gynecologist to the Nashville City Hospital; Fellow of the Southern Surgical and Gynecological Association; Member of the Alumni Association of the Woman's Hospital of New York, etc.

NASHVILLE, TENN.

I shall restrict my remarks to the surgical aspect of biliary calculi, as a consideration of the causation, frequency, symptoms of the various phases, their diagnosis and discriminating diagnoses, widespread complications, prognosis and medical treatment, so-called, would lead

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me far beyond the limits of a thesis of this character.

It may not be amiss, however, in describing the surgery of the gall-tracts, to allude to the very great frequency of gall-stones, as almost all organic diseases of the biliary reservoir and ducts are directly or indirectly dependent upon them. The frequent findings of unsuspected gall-stones at autopsies is not a valid contraindication to operation in cases which, from certain complications, menace well-being and perhaps life.

The causation has been held to be the stagnation of bile with an altered condition of the epithelium, forming both the nucleus and media for their development and resulting from various mechanical, diathetic and inflammatory conditions. It is to the latter, perhaps, that we may look for a simplification of the various existing etiologic hypotheses. The element of infection of the biliary ways in the production of gall-stone is an undetermined quantity. It may be stated that Mignot produced cholelithiasis by the injection of bacteria into the gall-bladder.

The supreme symptom is pain; when this occurs in the right hypochondrium it is always significant. It may vary from slight discomfort to the agony of a biliary colic, which is equaled only by the parturient effort. It is important to discriminate between the intermittent and paroxysmal pain in biliary concretions, from the continuous pain in the inflammatory infective and suppurative conditions of the biliary passages.

In connection with the diagnosis I wish strongly to emphasize that jaundice is not an essential sign of gall-stones and the practice of waiting for icterus as a confirmatory evidence of their existence is illogical and positively hurtful. Jaundice is a symptom common to the whole biliary tract, whether from inflammation, retention or obstruction. While in the latter, jaundice is inevitable, it is also commonly present from extension in simple catarrhal duodenitis. Hunter McGuire[1] says: "According to my observation, at least one-half of the cases of gall-stones are never attended by jaundice and at least one-half the cases of persistent jaundice are not due to gall-stones."

I should like to speak also of the cholangeal inflammations and also of the suppurative and infective conditions and their differentiation from lithiasis, but these can not be treated in the scope of this paper, except to call attention to them as being frequent concomitants and resultants of gall-stones; and to urge the early removal of troublesome cholelithiasis in the light of its inflammatory and ulcerative possibilities as well as its undoubted causal relationship to malignant disease.

The relatively small number of operations compared with the undisputed frequency of the disease, indicates that it is either overlooked or fails to give rise to serious trouble, or that the symptoms are mistaken for those of other disorders. The actual mortality is not known, as it is often a vague and undetermined malady and, when grave, is frequently considered only in the light of the complicating conditions. In regard to the surgical mortality, however, sufficient evidence has accumulated to allow us to draw convincing conclusions.

In the past eight years Kehr[2] has done 307 operations for cholelithiasis—255 women and 52 men. The total mortality was 11.7 per cent. Excluding deaths due to the pathologic condition, as hopeless carcinoma, advanced suppurative condition, etc., the actual mortality was 3.8 per cent.

Mayo Robson[3] gives the following indications for surgical operations on the gall-bladder or biliary passages: 1. Recurring attacks of biliary colic, with or without jaundice, and whether the gall-bladder is enlarged or not. 2. Enlargement of the gall-bladder, whether there be pain or not. 3. Persistent jaundice which was preceded or accompanied by pain in the region of the gall-bladder, with or without paroxysms resembling ague. 4. Empyema of gall-bladder, or peritonitis in gall-bladder region. 5. Abscess in region of gall-bladder. 6. Rupture, fistula, or wounds of gall-bladder.

The lessened danger of hernia in this region makes amplitude of exposure the sole consideration.

In tumefaction, linear incision over the prominence is all that is required. For exploration, a small vertical incision through skin, fascia, and peritoneum can be made at the outer border of the right rectus, beginning at the top of the tenth costal cartilage. This can be prolonged downward to any needed length and joined by another incision at right angles to it and across the rectus muscle, to give a liberal exposure of the subhepatic space. (Abbe.)

Somewhat the reverse of this triangular incision is proposed by Czerny, who begins his incision in the median line and prolongs it transversely to the right at the level of the umbilicus.

The oblique or transverse incision of Courvoisier, parallel with, and one-half inch below the lower border of the ribs, is capable of easy extension and gives adequate room for manipulation.

Bevan employs an S-shaped incision, for which most liberal exposure is claimed.

Of the operations on the gall-bladder, I shall discuss cholecystotomy, cholecystendesis, modified cholecystotomy without suture and cholecystectomy.

CHOLECYSTOTOMY.

Incision of the gall-bladder and suturing the cut edges to the parietal incision, with drainage, like many important life-saving surgical procedures, is of American origin, having been first performed by Dr. Bobbs, of Indiana, in 1867. It is the simplest of the gall-bladder operations, is applicable to the majority of cases, and the mortality is practically nil in cases without jaundice. In 115 cases, Mayo Robson[4] lost 5, 3 of which were complicated with cancer and 2 with infective cholangitis and jaundice. Excluding these there were no deaths in 100 uncomplicated cases.

Technique.—The usual vertical incision three inches downward from the tip of the tenth costal cartilage usually exposes the gall-bladder. If adherent, as the result of previous severe or existing inflammation, it should be freed from neighboring viscera. The next and most important technical step is the complete and careful surrounding of the gall-bladder with sterile gauze so disposed as to entirely wall off the field of operation from the peritoneal cavity. It is convenient to introduce two stout silk ligatures into the fundus to act as guy-lines. The contents may then be aspirated and the gall-bladder incised for exploration with the finger. Calculi may be removed with the finger, forceps or scoop. After all the discernible stones have been extracted, the operator should make a careful palpation of the ducts. If any stones are detected they should be removed by the appropriate maneuver. The edges of the gall-bladder incision are then sutured to the peritoneal and fascial margins of the wound by chromicized catgut. A non-

perforated rubber drainage-tube is introduced and the parietal wound partly closed by sutures. Copious dressings should receive the bile, or it may be siphoned into a bottle by rubber tubing. At the end of ten days the bile may be dammed up by a pad, and the opening usually closes in three or four weeks. If a sinus persist, there is usually a stone imbedded somewhere in the biliary tract, but many stones, overlooked or left, work out later.

Fistulæ resulted in 50 per cent. of Robson's cases where the gall-bladder was sutured to the skin, but in only 7 out of 160 cholecystotomies where it was sewn to the aponeurosis, all of which were ultimately cured by appropriate means.

The earlier operations were always, and a certain number are now, done in two stages. It avoids the risk of peritonitis, especially in the infected cases. It is much simpler and should commend itself to the inexperienced operator. To the expert it is less often required. Kehr employed it only 3 times in 100 cases. In acute cholecystitis, where the gall-bladder is small, deeply seated and can not be satisfactorily sutured to the incision, Riedel advocates the two-stage method, by allowing adhesions to form about a gauze tamponade, before incising the gall-bladder. The chief objection to the operation in two stages is that an impacted stone in one of the ducts could not be removed and might require a second operation.

CHOLECYSTENDESIS.

Immediate suturing of the gall-bladder after incision and extraction of the stone was first suggested by Langenbuch.[5] It is requisite that the bile-channels be open. It is the ideal operation in that it leaves no biliary fistula, but it presents the danger of peritonitis from leakage, prevents needful drainage of the inflamed tracts and walls off the cholecystitis and also cuts off the escape of any remaining concretions. It should be reserved for early cases, with slight inflammatory changes. Two rows of Lembert sutures are required.

MODIFIED CHOLECYSTOTOMY.

A modification of cholecystotomy, by Poppert, of Giessen, has recently been described by Coley,[9] as follows:

> The first steps of the procedure recommended by Poppert are the usual ones, namely, the incision of the gall-bladder and removal of the calculi; then, however, instead of directly suturing the bladder to the abdominal wound, he establishes between the two a narrow drainage by means of a thick and long drain, which is fixed by a suture in the lowest point of the incision in the bladder, and the lips of the wound are drawn as tightly as possible around it. The other end of the drain is sutured to the abdominal wound and is surrounded by a wick of iodoform gauze, which at the same time serves as a dressing for the bladder incision. The bile flows out through this tube of caoutchouc. In ten to fifteen days the obliteration of the bladder around the drain ceases, as is shown by the fact that the bile impregnates the wick and soils the dressing. At this time, however, the adhesions having been formed around the drain, there is no longer any danger of the bile escaping into the peritoneum. Then the iodoform wick can be taken out, and at the end of from three to four weeks the drain is removed. The fistula closes rapidly.
>
> The author has practiced this mode of drainage in forty-seven cases of simple cystostomy, and in ten cases of cystotomy combined with cysticotomy or choledochotomy. He has never had a failure, and claims the following advantages for his method:
>
> 1. It is extremely simple, and may be practiced in all cases where the bladder is distended or contracted. The method can be employed even in friable bladders—which heretofore have been considered as unfit for operation—and even in worse conditions.
>
> 2. It does not cause the formation of tight adhesions between the bladder and the abdominal wall and does not cause any painful contractions of the bladder and great biliary canals when the bladder and liver resume their places.
>
> 3. It affords protection against peritonitis, for as the bile flows out of the cystic wound it is absorbed by the tampons. The tamponade becomes particularly valuable when it is necessary to open an abscess situated above the bladder.

This has also been done by many American surgeons, and cases were reported by Longyear, of Detroit, and Hall, of Cincinnati, in 1893.[11]

CHOLECYSTECTOMY.

Excision of the gall-bladder was first performed by Langenbuch in 1882. It is regarded by Thiriar as the least dangerous of the operations on the gall-bladder. Its indications may be summarized: 1. As a secondary operation for persistent mucous fistula, as a result of insuperable obstruction of the cystic duct. (Robson.) 2. When the gall-bladder is contracted and can with difficulty be brought into the incision, extirpation can be practiced if the common duct is undoubtedly free. 3. Where the friability of the organ from inflammatory disorganization precludes other indicated procedures. 4. Malignancy, gangrene and ulceration.

The operation is anatomically exceedingly simple, requiring only blunt dissection of the attachment to the liver and ligation of the cystic duct, followed, or not, by drainage. The portion attached to the liver in a necrotic gall-bladder was left by Gaston, and the remainder trimmed away after ligation. Dr. Clinton Cushing[16] assumes that as the gall-bladder is absent in certain animals, such as the horse, the deer, and the elephant, it is probably, like the appendix, a vestigeal organ, and can be removed without detriment to the physiology of the economy, and that, being a cul-de-sac, a serious disease having once occurred was likely to return. He advocated excision in all cases of operation for gall-stones, save obstruction, to prevent reaccumulation or renewal of inflammation. He reported six cases, all followed by recovery.

On the other hand, Rose[8] considers the function and retention of the gall-bladder very important and advocates exploration of the ducts by incision at its base, and clearing the tract of stones by that avenue. He found that disablement of the gall-bladder caused compensatory dilatation of the other ducts, and that the continuance of such disablement or cholecystectomy would lead to new secondary lithiasis in the branches of the hepatic duct.

The surgery of the gall-bladder is almost perfected, but the management of calculi in the ducts by the various methods is as yet unsettled. I shall discuss the following operations on the ducts: Cholelithotrity, cysticotomy, choledochotomy and choledochostomy.

CHOLELITHOTRITY.

Cholelithotrity, or crushing the calculus in the duct, has been said to be preferable to incision. This is accomplished by: *a*, finger pressure; *b*, pressure by padded forceps; *c*, needling. The first is the least objectionable and Robson reports thirty cases with one death. Needling or breaking the stone into fragments was suggested by Mr. Thornton; crushing was suggested by Mr. Tait, and is the least of his wonderful work in this field. Both crushing and pressure by padded forceps have some of the dangers of incision and may present others, such

as leaving debris as nuclei for further concretions. They were practiced before the surgery of the ducts had reached its present stage of advancement, and are infrequently employed at this time.

CYSTICOTOMY.

Cysticotomy is the operation for incision of the cystic duct, and extraction of stone with or without suturing. The cystic and hepatic ducts and the upper part of the ductus communis choledochus can be reached by an incision through the anterior layer of the gastro-hepatic omentum, the liver and gall-bladder being drawn strongly upward. Cysticotomy is rarely required and only when a stone is so firmly impacted that attempts at dislodgment by manipulation and pressure fail. Drainage should be established with or without suture. Kehr operated on the cystic duct 23 times without a death.

CHOLEDOCHOTOMY.

Courvoisier estimated that 4 per cent. of gall-stones were located in the common duct, but Robson says from a surgical standpoint, 20 per cent. is not too high. Clayton Parkhill[13] says that stones were removed from the common duct 200 years ago. Courvoisier deliberately planned and performed the operation of choledochotomy in 1890, but Marcy, of Boston, removed a stone from the cystic duct the year before. The lower part of the choledochus may be reached by cutting through the peritoneum at the right of the first or second portion of the duodenum toward the median line. All manipulations, and especially suturing of the common duct, are rendered far more easy, as urged by Deaver,[14] when the finger is inserted in the foramen of Winslow, thus elevating the duct in the border of the gastro-hepatic omentum. It can be accurately palpated and an impacted stone can sometimes be pushed into the duodenum or back into the gall-bladder. The cystic and also a portion of the hepatic duct can be palpated. When the stone is located, linear incision of the duct can be made with the finger behind it, great care being exercised to prevent injuring the portal vein. In all operations on the duct, a sandbag under the back brings it more easily within reach. The feet should be lowered to allow the colon to gravitate downward, the liver being held up by large retractors. Gauze pads should be snugly packed about the field of operation. Adhesions, which usually exist, should be very delicately severed. If suturing is contemplated it should be done in layers, fine catgut uniting the muscularis, and Lembert sutures of silk, the peritoneum. Halsted[6] has described minute hammers for elevating the duct and putting it on a stretch to facilitate suturng. It is difficult to prevent leakage by any method, and it is best to drain. If it is inexpedient to suture, the entire efficacy of drainage with gauze has been abundantly proved and its employment ardently insisted upon, by W. E. B. Davis, who has made so many important contributions to the surgery of the gall-ducts. The importance of this suggestion is well illustrated by a recent report. Quénu[7] collected 95 cases of suture of the ducts with a mortality of 35.5 per cent., while the mortality in the cases without suture was only 18 per cent. In these were included 6 personal cases. In 2, sutures were used; both died. In 2 others biliary intoxication appeared; the sutures were cut and the patient recovered. The other two were not sutured and recovered.

Fenger[9] also believes that the common duct should not be sutured as a rule, and never without drainage, from the site of incision in the duct, and particularly drainage of the gall-bladder to prevent biliary intoxication. McBurney[15] has suggested that the anterior wall of the duodenum be opened at the junction of the first and second portion, and the common duct approached through the intestine. This obviates the difficult exposure and manipulation of the duct by the usual method, gives easy access to the stone by dilatation and slight incision of the duodenal opening of the duct, allows free probing for other stones, greater safety in suture of the duodenum, and more rapid recovery. He has performed the operation six times. Parkhill,[13] of Denver, has made a Murphy-button anastomosis between the common duct and duodenum with success, and Robson reports two similar anastomoses, by suture, with recovery.

Fenger collected 44 cases of choledochotomy in 1896, with a mortality of 18 per cent. He has operated on 7 cases, with 1 death, a mortality of 14.3 per cent. Kehr has had 7 operations with a mortality of 11.7 per cent.; Peterson[11] 20 cases, with 4 deaths, a mortality of 20 per cent.; and Robson 49 cases, with a mortality of 6.1 per cent., jaundice and suppurative cholangitis being present in all of his fatal cases.

CHOLEDOCHOSTOMY.

Choledochostomy, or attaching the duct to the incision in the anterior abdominal wall is rarely necessary, always difficult and sometimes quite impossible.

CHOLECYSTENTEROSTOMY.

Cholecystenterostomy, or making a permanent fistula between the gall-bladder and intestinal canal, by suture or mechanical appliance, is indicated to short-circuit the bile in: 1. Irremediable obstruction of the common duct from *a*, stone; *b*, adhesion; *c*, angulation; *d*, chronic catarrhal cholangitis producing jaundice. 2. Persistent biliary fistula. 3. Obstructive jaundice from pressure of cancer.

The first cholecystenterostomy was performed by Winiwarter, of Liège, in 1880, who sewed the gall-bladder to the colon and attached both to the abdominal wall. After union had occurred, he opened the approximated surfaces and sewed the cut margins together, as we do in making lateral anastomosis by suture. After five attempts he succeeded. But it was the genius of a southern surgeon, Dr. J. McFadden Gaston, that gave to humanity the operation of duodeno-cholecystenterostomy,[17] in 1882. This was first performed on the human subject by Terrier, in 1889. However, it has been a safe and generally applicable procedure only for the last dozen years. The introduction of that most ingenious surgical device of the age, the Murphy button, has given the operation a much wider scope by the simplicity of the device and the rapidity with which it can be applied. Murphy collected thirty-eight cases without a death, some years ago, all that had been reported up to that time. Many of these operations have been done since with uniformly good results.

There is a certain class of cases where, owing to the contracted condition of the gall-bladder, or fixity of the duodenum in the depths of the loin as a result of inflammatory changes, the viscera can not be made to approximate each other and in that event the colon may be substituted. While it should be our aim to restore parts to as nearly a normal and physiologic condition as possible, still where it is inconvenient and impossible to switch the bile into the duodenum, we may utilize the

colon, as has been frequently done, without detriment to the economy in the supposed necessary presence of bile in the small intestine. This possibility was abundantly proved by the elaborate and carefully conducted experiments by Robson[18] on a case of biliary fistula, which he epitomized in the following conclusions:

1. The bile is probably chiefly excrementitious, and like the urine, is constantly being formed and cast out.

2. Though the bile probably assists in the absorption of fats, its presence in the intestine is not necessary for the digestion of such an amount of fat as is capable of supporting life and keeping up nutrition.

3. Increase in body-weight and good health are quite compatible with the entire absence of bile from the intestines.

4. The antiseptic properties of the bile are unimportant. 5. Whatever little antiseptic quality bile may have is probably derived from its admixture with the gall-bladder fluid.

6. The supposed stimulating effect of the bile on the intestinal walls is not necessary for a regular action of the bowels.

COLOCHOLECYSTOSTOMY.

I beg leave to briefly report the following case of colocholecystostomy for chronic catarrhal cholangitis with gall-stones:

B. J. G., male, aged 27, had a severe attack of biliary colic attended with tenderness and jaundice in February, 1897. He had had several light attacks of hepatic colic some weeks before, and he had been in Johns Hopkins Hospital, Baltimore, awaiting operation, but improved, and so it was deferred. He was operated on after the severe attack in 1897, by Dr. J. F. W. Ross, of Toronto. A number of stones were removed, a fistula made and a drainage-tube kept in for two weeks. The fistula remained open until June, 1897, when Dr. Ross closed it by suture, and the patient, who had been in bed the whole of the four months, was up in a week. In November, 1897, he again had a number of attacks of colic and jaundice, which kept up intermittently until March, 1898, when Dr. Louis McLane Tiffany, of Baltimore, opened the gall-bladder. As he found no stones, he closed by immediate suture, fixed it to the abdominal wall, and closed the incision throughout.

In June of the same year, while still in the hospital, the patient was again seized with attacks of colic and transient jaundice, which, in the absence of Dr. Tiffany, induced his assistant, Dr. I. R. Trimble, to again open the gall-bladder for exploration. He wrote me that he found no stones, but thought he had succeeded in passing a rubber catheter through the cystic duct and thence into the duodenum. The gall-bladder was sutured and attached to the abdominal incision, which was closed by buried and superficial silkworm gut sutures.

On July 3, he received a blow on the head, which resulted in a fracture of the skull, which was elevated by Dr. Robert Pillow, of Columbia, Tenn.

In August, 1899, fourteen months after the third gall-bladder operation the pain and colic returned and was rather frequent and more severe than ever before. On October 1, he had an attack that lasted four days, and could obtain no relief. He came to see me in Nashville and, while there, had one of the most severe attacks of biliary colic I have ever seen. I gave him 2¾ gr. of morphin, hypodermically, in less than three hours without any appreciable effect on the pain. He was not accustomed to taking morphin, and after the operation 1/8 gr. had a very satisfactory and complete effect.

On Oct. 12, 1899, in the presence of jaundice which had existed fitfully for two months, I made an exploratory operation through the old scar parallel with the ribs. As the gall-bladder was attached to the parietes, it was opened, and a black, tarry fluid was found therein and one large gall-stone, perfectly black and somewhat larger than a cherry-stone, together with some smaller crystal-like stones. An effort was made to catheterize the ducts, which it was reported had been done before without success. The gall-bladder was irrigated and temporarily packed with gauze. It was then dissected from the parietes below and a careful palpation of the ducts made, but no other stones could be detected. The adhesions were very considerable as the result of so many previous operations and such long-continued inflammatory trouble, and the gall-bladder was much contracted. I did not wish to content myself simply with the removal of the two small stones, nor yet did I desire to close it up again or give him another biliary fistula, both of which had failed to give permanent relief. Kelly, Senn and Murphy had all advised a cholecystectomy, but after I found no calculous obstruction to account for the recent colic and existing jaundice, I concluded that it must be a chronic catarrhal cholangitis with intermittent inflammatory obstruction. I thereupon deemed it unwise to do a cholecystectomy, and decided to make a cholecystenterostomy. The duodenum, however, was so matted with adhesions and the gall-bladder was contracted to such an extent that I did not think I could make the anastomosis with safety. I, therefore, utilized the hepatic flexure and made a Murphy button anastomosis with gauze drainage. There was no untoward symptom. A little bile came out after the removal of the gauze, on the third day, but none thereafter, and the drainage tract closed quickly. The jaundice faded, urine cleared up and he had two normal bowel movements a day, whereas, he had previously been obliged to take purgatives daily. He went home at the end of two weeks, with a clear complexion and a gain in weight; has had no trouble since, but the button has not passed.

McGuire reports a button retained over a year after cholecystenterostomy, but Treves has never known one to remain in the gall-bladder.

NOTE.—I have had a communication from Dr. Ross since this paper was read, referring me to a report of the first operation performed by Dr. Ross, upon this patient; the specimens were illustrated in the International Clinics for October, 1897, Vol. iii, 7th Series. About 3000 gall-stones were removed which were denominated by Ross and also by Frerichs, "biliary gravel."

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312 North High Street.

A CASE OF PERFORATING GASTRIC ULCER.*

ALLEN JONES, M.D.

Adjunct Professor of Principles and Practice of Medicine, University of Buffalo.

BUFFALO, N. Y.

For the following case I am indebted to Dr. A. B. Beiver, of Ridgway, Pa., who kindly referred the patient to me Sept. 20, 1899.

The patient was a man, by nativity a Swede, aged 57 years, by occupation a tanner. He said that his father died at the age of 90 and his mother at the age of 45—cause unknown. He had two brothers and two sisters.

*Read before the Fourth District Branch of the N. Y. Medical Association, Buffalo, May 8, 1900.

all of whom were in good health. The man had been suffering for five years from recurring attacks of gastric pain and vomiting. After stopping work and abstaining from all but small quantities of predigested milk and other liquid foods for a few weeks, his vomiting ceased, and he rapidly gained strength and returned to work. This happened several times and each succeeding attack was more severe than the former until finally, before I saw him, he had not been at work for four months. Owing to circumstances which prevented me being in my office when the patient first called, Drs. Stockton and Woehert very kindly examined him for me. He complained of weakness, loss of flesh, poor appetite, pain in the epigastrium, eructations and vomiting. He was constipated most of the time, but occasionally had attacks of diarrhea. His skin was sodden; his urine amounted to 864 c.c. in 24 hours, and the urea to 16.41 grams; there was a trace of albumin, but no sugar and no indican; the acidity was normal and the microscopic examination negative. The thoracic organs were normal, though the pulse was weak and the capillary circulation poor.

The first examination of the stomach showed moderate gastric stasis but no marked stagnation. The total acidity was 56; the free hydrochloric acid registered .12 per cent.; no lactic acid was found. On October 5, I examined the stomach before breakfast and found a lot of the food eaten the night before—the odor of which was not offensive though the mass was somewhat yeasty. Free hydrochloric acid was present; lactic acid was absent; butyric and acetic acids were present; hemialbumoses and peptone were present in large quantities; rennet ferment was active; starches were not digested. Microscopically, a goodly number of large long bacilli and strings of cocci were found but no Oppler-Boas bacilli were discovered. Subsequent examinations revealed similar motor, chemical and microscopic conditions, and as there was never at any time epigastric tumor to be felt, a provisional diagnosis of benign stenosis was made. There was no history of hematemesis nor was any blood found in the gastric contents. Diet, gastric sedatives and local treatment proving of no avail, operation was advised. On October 19, Dr. Park made a median epigastric incision and found the lesser curvature and pylorus attached to the liver by recent adhesions which were separated and revealed a clean chronic perforating ulcer of the superior anterior surface, very near the pylorus. The perforation was large enough to admit a lead pencil and the chronic nature of the ulcer was apparent by the formation of a new epithelial surface over almost its entire depth and by the large amount of thickening in and about its margins. The pylorus was amply patulous. Pylorectomy was performed and the patient succumbed a few days later owing, doubtless, to the fact that he was seriously weakened and reduced before the operation and was much past middle age. Pyloric stenosis probably depended upon spasm resulting from the irritation of the ulcer.

436 Franklin Street.

DR. GEOFFROY, of Rome, has been administering a solution of resorcin in certain digestive disturbances, and a child in his charge died. The parents' sued him, and the medical expert summoned stated that resorcin is toxic and that an adult can not take over 2½ gm. To prove its harmlessness Geoffroy took large amounts for several days and died in consequence.

REVIEW OF THE PRESENT STATUS OF JONNESCO'S OPERATION.*

MARCEL HARTWIG, M.D.
BUFFALO, N. Y.

The olden writers considered it proper to commence an allocution with a *captatio benevolentiæ* and so do I; with what success, remains to be seen. At all events I feel obliged to make an attempt to dissuade you from harsh criticisms because my paper will necessarily fall short of my own demands; what then can I expect from you? If there be any blame, your secretary must share it with me, as his request for a paper came on a very late day, and I promised against my better conviction. Furthermore, I have to say in explanation of my choice of title, that while it is certainly wise to call an operation by a name fully expressive of the procedure, it is not less our duty to acknowledge the meritorious work of our confrères who have promoted science. The highest reward we can bestow is due to those whose genius has given us a meritorious method for alleviating human suffering. It is therefore fitting that I should call this operation—neurectomy of the cervical sympathetic—by the introducer's name.

If we desire to obtain an understanding of the effects to be expected by resection of the cervical sympathetic we must recur to the physiology of this important nerve; and here, in delving into details, we find more discrepancies than we could expect from a perusal of the text-books. Preeminently we must not forget that all results of physiologic research in animals have to be transferred with caution, into the realm of human physiology. The location of the nerve is different according to the species; and late effects have been well-nigh neglected by physiologists. While the previous observations of accidental lesions have taught us some things, Jonnesco's labors have already shed considerably more light, and he and his followers will give us still more.

Presuming that the essentials are fresh in the minds of my hearers, let me recite some rarer observations. Bidder says that after cutting the trunk the salivary gland atrophies. Gad says that electric irritation of the upper end of the severed trunk, while it remains in connection with the head, produces general contraction of the blood-vessels of the head, except those on the mucous membrane of the cheeks, lips and gums, where redness appears. Seeligmueller says that traumatic paralysis was published eight times previous to 1876; but that only twice, redness and raised temperature of cheek and ear were reported, and twice only, flattening and reduction of the substance of the corresponding half of the face. Brown-Séquard saw, 18 months after section of both sympathetics on the neck of the guinea-pig, distinct atrophy of the brain; after one-sided section, atrophy of the brain of the same side only; whereas, Vulpian only once succeeded in seeing the same result. Wagner seems to have been the first man to find (1865) that hypotony of the eyeball follows the section of the ganglion supremum, while the myosis was well-known. Panas has shown though, that this hypotony does not last. While Hippel and Gruenhagen have shown that irritating the trigeminus within the skull produces glaucoma, Abadie says that this is due to the sympathetic fibers accompanying the trigeminus.

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Thus, he explains the appearance of glaucoma fugax in the sound eye, after iridectomy on the diseased side, by reflex irritation of the sympathetic fibers of the good eye, similarly as the reddening of the sound side, by the irritation of the central stump of the severed sympathetic on the other side, in Dastre and Morat's experiment. If we follow the literature, of all the symptoms ascribed to section of the sympathetic in the neck the only constant one seems to be narrowing of the pupil. The latest peculiar observation is by Neuschueler (Jan. 26, 1899), who found microscopic hemorrhages in the subarachnoid space and in the ciliary body of cats and rabbits after section of the cervical sympathetic of the ganglion supremum.

After glancing at these physiologic reminiscences, let me approach our subject proper. Although Jaboulay made the first intended sympatheticotomy on both sides, Sept. 2, 1895, and although Baracz had already proposed the full neurectomy of the cervical sympathetic in 1893, Jonnesco was the first man to do the full neurectomy on both sides (1896), and up till to-day he has performed more of these operations than all other surgeons together. He is, at the same time, the man who most persistently widened the field of indications. He kept his labors constantly before the eyes of the medical world, beginning in the Comptes Rendus du Dixième Congrès de Chirurgie, 1896. His description of the operation itself, which I herewith circulate,[1] may already be called classic. Let us not forget Abadie, however, since he seems to have established the indication for extirpating the ganglion supremum for glaucoma.

The original purpose of Jaboulay was the cure of epilepsy. The theory that exophthalmic goiter is caused by an irritation in the cervical sympathetics certainly covers the field of phenomena better than any other and clearly indicates the neurectomy of the whole chain of three cervical ganglia. An irritation of the cervical sympathetics ought to produce bulging of the eyes; as removal of the upper ganglia causes retraction of the bulbi. An irritation of the lower ganglia accelerates the heart and consequently section of these slows it. There are, however, accelerating fibers in the upper two thoracic ganglia, and here may be an explanation if the operation should fail in slowing the heart. We know least of all regarding the influence upon the thyroid gland; but, inasmuch as sympathetic fibers accompany the thyroid arteries, we can at least construe an influence, little as we really know of this kind of influence. Let us not forget that this theory does not explain all, for example, why the affection is generally on both sides, or why there are *"formes frustes"* where the swelling of the thyroid is wanting, or where the bulging of the eye is absent. Let us not forget that Filehne has made the meritorious discovery that exophthalmic goiter can be produced by section of the corpora retiforma if lesion of the fourth ventricle be avoided; that other phenomena may accompany exophthalmic goiter, as the tremor and nervousness which point to involvement of the central nervous system itself; that the extirpation of the goiter alone has often cured the disease, and that thus failures by neurectomy of the sympathetic may occur. But, the results thus far are very gratifying, and last, but not least, of all surgical means neurectomy is almost devoid of danger—thus far only two deaths are recorded—while the extirpation of the goiter is very hazardous and necessitates the tying of the three or four thyroid arteries and is not better in its final effects than the neurectomy, while it does not meet the theory half as well.

The theory upon which Jonnesco attempted the cure of essential epilepsy is much less substantial. He thought, simply by producing hyperemia of the brain, to increase its nutrition and thereby possibly to cure inveterate cases, and it may be he thought of the experiments of Kussmaul and Tanner, showing that anemia of the brain produces an epileptic fit. The exasperating character of many cases of epilepsy and the well-known failure of any number of methods, the surgical included, must have led to the attempts at neurectomy, while the physiologic atrophy of the brain mentioned heretofore may have escaped his calculation. At any rate, the results have not been unfavorable as a whole, though not as gratifying as with Graves' disease and glaucoma; while the ultimate effects are, considering the novelty of the procedure (four years) unknown to-day in man.

The final results as far as ascertained and published to date, are: Jonnesco's operation for epilepsy: There were 45 cases (Feb. 11, 1899); 55 per cent. cured, 28 per cent. improved, 15 per cent. not benefited—one case cured of chorea simultaneously. Jonnesco's operation for exophthalmic goiter: Ten cases were operated on; 60 per cent. recovered, 40 per cent. improved. In one case of unilateral resection unilateral improvement followed. Shortest observation was for a period of four months *post operationem*. Jonnesco's operation for glaucoma: There were 8 cases where vision was not lost, and in each there was improvement, particularly in the glaucoma chronic simplex where iridectomy is useless. Here he removed the uppermost ganglia only, except in one case in which the exophthalmic goiter also was present. In all there were forty-two bilateral resections with no deaths from the operation. Later on six epileptics died. This is a grand record, indeed, for four years of assiduous labor, a result entitling Thomas Jonnesco to a place among the stars of the medical firmament, and to the honor of having the operation carry his name, Baracz and Jaboulay notwithstanding, although the latter's first case may have inspired Jonnesco.

Only the cool judgment of the whole medical profession can finally establish the merits or demerits of an operation. In the Société de Biologie, Dejérie criticized sharply the results obtained in epilepsy, particularly Chipault's, who, according to Schober's report, could not refute the statement that in Paris not a single cure had been obtained. Yet Professor Dupuy had also to acknowledge this. Paris having been the nidus of this operation, it does not speak well for its effect in epilepsy.

In glaucoma generally those cases were submitted in which vision was almost lost and iridectomy had been done in vain; still improvements were generally noted where vision was not entirely lost. Mohr had improvement from vision 5/15 to 5/9; field 5 to 10 degrees. Dayreux saw a failure of Abadie's. Demicheri, in Montevideo, had in three cases, very decided improvements.

Panas and Jaboulay saw the hypotonia vanish in three months and assumed that the nervous influence

1. Trav. de Neurol. Chirurgic par A. Chipault, Paris, Vigot Frères, 1897.

travels afterward through the vagus and trigeminus. Abadie saw in a case of two years' standing vision increase after several months from 1/10 on left, to 1/3, and on the right from 1/2 to 2/3, the pupils retaining their normal conditions, but in another case after a year the vision again deteriorated.

Dr. T. M. Ball, in St. Louis, Mo., had two improvements; but in a case of atrophy of the optic the result was nil. In exophthalmic goiter the most gratifying results were obtained by others than Jonnesco.

Jaboulay's first case, in which he removed only the middle of the trunk of the sympathetic, made a partial improvement; a second case of his improved rapidly after removal of the ganglion supremum alone, but died after ten days from congestion of the lung.

Combermarle and Gaudier report a case where the exophthalmos diminished; the pulse went down from 200 to 100; the precordial pain vanished, but the goiter remained. Gerard-Marchant saw the exophthalmos vastly diminished; Chauffard and Quénu saw no effect. We must not forget that Jonnesco himself did not extirpate the whole chain of ganglia at first, and that where it was intended, some operations remain technically incomplete, on account of the great difficulty in removing the cardiac fibers. Furthermore, some cases of Graves' disease are not primary, but the tachycardia is secondary to the pressure of a very large thyroid; here only the removal of the thyroid can cure, since the effect of the enlarged thyroid is to stretch, and thus diminish the influence of the vagus.

The number of cases I could gather in the literature accessible to me is very small, and probably this is the case in the at present inaccessible literature. After we know more of the very late physiologic effects in man, we shall know better how much risk is involved for the future well-being of a person deprived of both cervical sympathetics; and, considering the statement of Brown-Séquard about the atrophy of the brain in the animal, I do not wonder that the profession follows Jonnesco slowly. My impression is that the operation will come to stay after all that may be feared as to its sequelæ. The horrible cases of incessant epileptic fits should be operated on first, in larger numbers, as their pitiable condition permits us to consider no risk too great that holds out a prospect of relief. Here the American surgeons ought to study the late effects first; in almost blind glaucomas next, and in true exophthalmic goiter last.

If the corpora restiformia are the center of the affection, Jonnesco's operation interrupts the telegraph line, and this is the most complete theoretic basis of operation in Graves' disease. I have seen a post-mortem report which is in entire keeping with Filehne's experiment; while it is well known that changes in the sympathetic are just as often missed as found post-mortem in Graves' disease, and here, I think, Jonnesco's operation will come to stay, if it can be shown that atrophy of the brain does not follow.

884 Main Street.

THE AUTHORITIES have donated a tract of land near Moscow for the erection of a home for aged and indigent medical women. A society organized for the purpose is collecting funds to build and maintain it. Public sanatoria for consumptives are also planned at Massandra and Essentuki, and subscriptions are pouring in.

COMMON, BUT GENERALLY UNRECOGNIZED SYMPTOMS OF EYE-STRAIN.*

ELMER G. STARR, M.D.

Clinical Professor of Ophthalmology, University of Buffalo.

BUFFALO, N. Y.

It is now, and for several years has been, quite generally recognized that many headaches have their origin in some form of eye-strain; and persistent or frequently recurring headache without other obvious cause very soon suggests to the layman, as well as to the physician, the probability of the existence of some fault in the visual apparatus.

The truth of the relation of eye-strain and headache was not accepted at once by members of the medical profession and for a long period was slow in establishing itself in their minds. To-day, however, there are few who do not recognize this truth.

Almost if not quite as common as headache are other symptoms which are more rarely looked upon as having any relation to vision, but which should properly be classed with headaches as evidence of some imperfection in the eye.

One of the most frequent of these is pain in the back of the neck. This sensation is often described as a pulling or drawing, or a tense feeling. It is frequently mistaken for what is commonly called "muscular rheumatism." The pain often radiates down the back and to the shoulder, or may even manifest itself as a pain in the side. More commonly, however, it is limited to the back of the neck and is frequently more pronounced on one side. The statement that this condition exists is rarely volunteered by the patient who seeks the services of an oculist, because he does not think of it in relation to the eyes. Inquiry as to its existence, however, reveals the fact that it is present in about 80 per cent. of all cases of refractive error presenting themselves. I have come to consider it as almost pathognomonic of eye-strain, and rarely indeed have I seen it fail to disappear with the correction of the visual error.

Another symptom which I would class under this head is mental confusion, or confusion of ideas, or an inability to fix the attention upon a particular object of thought, without great effort. When the attempt is made to focus the attention upon some matter requiring concentrated thought, the mind soon wanders, and it is only by great exertion of the will that it is brought back again to the subject under contemplation. There may be difficulty in carrying out a line of reasoning, some part of it eluding all attempts at placing it connectedly in the line. Patients not infrequently speak of this symptom and observe that it is more troublesome the more the use of the eyes is demanded in the performance of their task.

It is worthy of remark in this connection, that, to the perfected eye found in man as contrasted with the eye of most of the lower animals, we probably owe in large measure the development of the higher faculties of our mind. For without the fovea, that small highly organized area of the retina, as found in the human eye, it would be impossible to give thoughtful attention to an object looked at to the exclusion of other objects. For to an eye without a fovea all objects in focus within the field of vision appear equally distinct. "How could we give exclusive attention to one thing if all other things

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were equally distinctly seen? Thoughtful attention to the object looked at seems to be a necessary condition of the emergence of the higher faculties of the mind. Concentration of thought on the object thought of is a necessary condition of effective thought work." (Le Conte.)

Closely allied to this condition of disturbed mental processes which I have mentioned, and possibly in part depending upon it, is mental inaptitude or backwardness in children. Comprehension seems obtuse and slow. Frequently this condition develops rather suddenly in a pupil who has previously had no trouble in keeping his place with his class, and is then often accompanied by headache and other nervous manifestations. The correction of an existing eye-strain changes all this. School work is done more easily, and frequently the child is wonderfully changed mentally and physically. Instances are common where a child is backward in his classes in school simply because of the effort required to see distinctly. By this I do not mean to imply that vision is not distinct for all distances, but that clear vision is attained only through the continuous exertion of a great amount of nerve force. In fact the possession of distinct "sharp" vision by a person is no evidence that his eyes are free from imperfections and that they are not working hard to maintain good vision. In short "good vision" does not mean "good eyes" although it is usually so considered by the laity.

As illustrating this condition I will give briefly the history of a boy 9 years of age, who until within six months of the time of this history was able to do, without difficulty, the work required of him in his class in school. Now, at the time of his visit, he seems quite incapable of doing the same work done by the other pupils of his class. He is listless and seems slow of comprehension. His appetite is fickle, and sleep is disturbed. He is pale and is losing in weight in spite of the tonics which he is taking. Latterly he complains of headache and occasionally of blurred vision; which latter complaint impelled his mother to bring him for an examination of his eyes. A high mixed astigmatism was found and correcting glasses given. The use of his medicine was stopped, but his glasses were worn constantly. Within a week an improvement in the boy's condition was observed; his school work was resumed and performed without trouble, while his physical condition showed a great improvement.

Irritability is another common result of eye-strain in adults as well as in children. We are all liable to become irritable to the verge of irascibility if overworked, and it is easy to see how a nagging eye-strain kept up hour after hour for days and months may so draw on the nerve-supply as to lead to the same result.

Vertigo is a symptom frequently associated with vision. It may be the result of some marked muscular anomaly, or, more often due to a refractive fault. The vertigo may be transient and infrequent or may be very marked and persistent, so much as to suggest grave intracranial disease. It may bear a close resemblance to Ménière's disease. Many individuals having vertigo present with it that symptom which is characterized by a dread of crowds or congregations. Often great effort is required on the part of these persons to remain quietly in a church or theater filled with people. A feeling of impending danger or the fear of an attack of fainting, or an ill-defined sense of apprehension impels the unhappy sufferer to leave the room to get relief from these disturbing feelings. This may be one of a group of symptoms embraced by the term "nervousness." A very high proportion of those who come to the oculist with refractive errors admit themselves to be nervous.

A case that well illustrates the fact that vertigo may be the result of eye-strain is that of Mrs. V., married, aged 37, who had had constant vertigo after a sudden onset, for ten days. Nausea with some vomiting accompanied it. The distressing symptoms were aggravated by turning the head or body toward the left; especially was this true if done while lying down. These symptoms grew worse and became so distressing that the attending physician feared some brain disease existed and called counsel to aid in making a diagnosis. Eye-strain was suggested as a possible cause of the trouble and as soon as it could be done the refraction of the eyes was measured. They were found to be unsymmetrical. One eye had moderately high compound hyperopic astigmatism, while the other had a mixed astigmatism; the astigmatic axes were unsymmetrical; a slight muscular imbalance also existed. Correcting glasses were at once prescribed and the distressing vertigo gradually disappeared. Some months later, because of an accident to her glasses, the patient was without them for several days, when a return of the vertigo made her hasten to get new ones, which promptly gave her the desired relief. A fact worthy of note in regard to this case is this: Almost at once when the eyes were placed completely under the influence of the mydriatic there was a diminution in the severity of the symptoms, i. e., as soon as the eyes were put to rest by the mydriatic the reflex disturbances began to lessen; and I am sure that very valuable help may be had by the physician in the use of a mydriatic in making his diagnosis, in many cases of suspected eye-strain. A transient mydriatic like homatropin should be used, and some precautions should be observed, such as not to use it in too old subjects, nor in eyes where tension seems greater than normal.

Another rather interesting condition which I frequently find, apparently depending on eye-strain, is a varying or fluctuating character of the handwriting. The writing in the beginning of a letter may be regular and smooth, but after a few minutes its character changes, and becomes more irregular, angular and jerky,and less legible. This condition is found most often in those who do much writing, and I mention it more for its interest than for its importance.

Probably the most frequent of all the results of eye-strain in its various forms is seen in disturbances of the digestive apparatus. For the past eight years I have been careful to make inquiries of patients having refractive or muscular imperfections as to the condition of their digestion, and in the majority of all those who come with refractive errors or visual strain of any kind, I have found a history of some form of indigestion, so-called. Following the progress of a large number of cases, I have seen the digestive disturbances disappear more or less promptly with the correction of the visual defect. In so many instances has it been observed that a recurrence of the symptom follows the disuse of the glasses, or is the first evidence of the need of a change of glasses, that the fact of cause and effect is surely established, and it is abundantly demonstrated that very many cases of digestive derangement have their origin solely in the organs of vision.

A case in illustration of the foregoing is that of Mrs. J. D., a married woman, 37 years of age, who had a serious stomach and intestinal indigestion for 1½ years prior to her eye-examination in May, 1896. I have no analysis of the stomach contents made after a test-meal, but that the function of the stomach was greatly disturbed may be inferred from the fact that at the time of her examination the stomach retained nothing, not even water, longer than twenty minutes. For more than a year she had been under the care of a physician, and had spent three months in a hospital, where she was placed upon the strictest dietetic regimen, and where all resources were exhausted in the attempt to correct her distressing conditions. An examination of her eyes revealed an astigmatic condition, unequal in the two eyes. The muscles were normal in balance. The effect of correcting this eye-strain with glasses was marked. Within twenty-four hours the intense irritability of the stomach and the nausea had almost entirely disappeared; and within a fortnight the patient was eating a varied diet and was free from all symptoms of indigestion. She remained well for more than a year, when some symptoms of returning indigestion prompted her to come for another examination. A slight change in the astigmatism was found and corrected, whereon the disturbing symptoms promptly disappeared.

In the foregoing I have not taken extreme cases to illustrate the conditions, nor extreme conditions for my subject-matter, but have confined myself to a few common, as I think, conditions resulting from eye-strain. a statement which any physician can soon verify for himself. It may be that this matter is familiar to most or perhaps all of you here, but that it is not generally familiar to the medical profession I have many times had impressed upon me by my experience with patients, and this is my reason for presenting it.

523 Delaware Avenue.

DISEASES OF THE PANCREAS.

REVIEW OF THE PRESENT STATUS OF KNOWLEDGE CONCERNING THEM.*

CRAYKE PRIESTLEY, M.D.

DES MOINES, IOWA.

The difficulties in diagnosing pancreatic affections are so numerous and gigantic that we rarely find a case in literature where a correct diagnosis has been made before operation or necropsy. However, there are some, and this fact should prove a powerful stimulus to all medical men in their study of this organ. Within recent years, more attention has been given to the pancreas than hitherto, and with results quite gratifying. To these the writer wishes to call attention, with the hope of arousing greater interest in these affections.

Pancreatic hemorrhage may occur as small infiltrations diffused through all or a part of the gland, or it may consist of a large effusion of blood into the gland and the surrounding tissues. Anders[1] has collected 40 cases of pancreatic hemorrhage, and in all except 1, there was hemorrhagic infiltration into the gland itself. In 17 cases, the structures around the pancreas were infiltrated, in 12, the retroperitoneal tissues, and in 5, the lesser peritoneal cavity. This affection is more common in males of rather advanced years. In Anders' collection, mention is made of the use of alcohol in the anamnesia of 14 cases, of dyspepsia in 3, of jaundice in 2, and of traumatism in 3. Heart lesion was found in 2 cases, and primary carcinoma in 1. The attack begins suddenly with severe colicky pain in the epigastrium, vomiting, and all the manifestations of profound shock; death follows very shortly, sometimes immediately, and usually within forty-eight hours. A diagnosis is seldom made before the necropsy.

Of acute pancreatitis we have three recognized varieties; the homorrhagic, the suppurative, and the gangrenous.

In the hemorrhagic form, the organ is enlarged, is of a chocolate color, and shows circumscribed and diffuse infiltration of blood in the interstitial fat tissue. Disseminated fat necrosis is also frequently seen; this consists of numerous small or large, white, opaque areas, situated within the gland or in the subperitoneal fat tissue. This peculiar necrosis is found only in affections of the pancreas. A. Katz and F. Winkler[2] conducted a series of experiments on dogs—fifty-one in number—in which they tied, and then divided the ducts of the pancreas. They found, as a result, marked fat necrosis most pronounced in the areas nearest the ligatures, consequently they concluded that the necrosis is due to the fat-splitting ferment of the pancreas. Hemorrhage was almost invariably found around the areas of necrosis; and it is probable that this increased the tendency to necrosis by lowering the vitality of the affected tissues. The symptoms are sudden, violent, deep-seated pain, and great tenderness in the epigastrium. Fever is moderate. There is a rapid pulse and anxious expression—indications of collapse; also vomiting and constipation or a fatty diarrhea. Jaundice may be present, and is due to pressure of the swollen head of the pancreas on the common duct. The prognosis is bad but not absolutely hopeless, as recovery has been known to take place. Osler[3] records a case which was diagnosed as intestinal obstruction. The abdomen was opened and acute hemorrhagic pancreatitis discovered; the abdominal wound was closed and the patient recovered. This proves beyond all doubt that recovery may ensue, and it is an open question whether these cases are not sometimes considered as biliary colic and go on unrecognized to complete recovery.

In acute suppurative pancreatitis, we find either one large abscess occupying the head, body, or entire organ, or numerous small areas of suppuration scattered throughout the gland. The abscess may rupture into one of the adjacent hollow viscera, in which case broken-down pancreatic tissue might be found in the stools. The infection probably extends from the duodenum along the pancreatic duct into the gland, and there is frequently a history in these cases of repeated attacks of gastroduodenitis. Peritonitis may result from the rupture of one of the small abscesses, or pleurisy from the extension of the inflammation through the diaphragm. In the suppurative form, the symptoms are usually not so severe nor acute, and pain may be slight or absent. Evidences of septicemia become gradually more and more pronounced, there are chills and sweats, with a very irregular temperature and a progressive cachexia; jaundice may appear, as may also fatty stools. The disease runs a course usually of several months.

In gangrenous pancreatitis, the gland frequently presents the same appearance as in the acute hemorrhagic form, except that there is a circumscribed gangrenous

*Read before the Iowa State Medical Society, Des Moines, May 16, 1900.

area. When the gangrene is extensive, the whole organ may be destroyed. It is found to be a dark brown, soft, shreddy, decomposing mass, loosely attached, or even floating freely in a thin, purulent, foul-smelling fluid which is contained in a sac, formed by inflammatory exudate and the adjacent peritoneum. As in the case of abscess, a communication may be formed with the bowel and the sac contents, and pancreas and all may be evacuated through this channel. Trafoyer[4] reported a case in which the pancreas was discharged per rectum and the patient lived seventeen years afterward. Fat necrosis is usually very extensive in cases of gangrenous pancreatitis. The symptoms are practically those of acute hemorrhagic pancreatitis, but the course of the affection is somewhat more protracted.

There is another condition to which attention should be given, but before proceeding further, permit me to record the notes of two cases.

CASE 1.—G. H., a male, aged 25 years, with previous history good, noticed pain and swelling in the right parotid region, Jan. 18, 1900; this increased on the following day and the left side became involved. He came under observation January 21, when he presented a typical case of mumps. He was seen again January 25, by which time the parotid swelling had almost disappeared. The temperature was 100, the pulse 80, and the patient complained of a pain and aching in the epigastrium and of very distressing nausea. January 26 the temperature was 101, the pulse 105, and the pain in the epigastrium was intense and accompanied by very great tenderness. He vomited eight times, but the bowels had not moved, nor had he taken any nourishment for over forty-eight hours. The pain was so severe as to require the hypodermic administration of 1/4 gr. of morphin. January 27 the temperature was 100.6, pulse 105, and pain and tenderness in the epigastrium still great but not so intense as on the previous day. He vomited once and had several spells of retching; the bowels moved after he had taken 10 grains of calomel; but on the whole, he was very miserable. January 28 the temperature was 99, the pulse 80, and the pain and tenderness in the epigastrium had moderated considerably, though still present and distressing. He took a small amount of milk, and did not vomit or suffer greatly from nausea. January 29 the temperature and pulse were normal, and he felt much better and relished food. There was not much pain, but the tenderness in the epigastrium still remained. From this time on he improved very rapidly, the tenderness disappearing entirely after about three days.

CASE 2.—J. McQ., a male, aged 14 years, had the mumps on the left side only. The disease appeared February 12, but he was not seen until February 16, when the parotid swelling was scarcely noticeable. He complained of severe headache and pain in the epigastrium. The temperature was 102.5 and the pulse 80. February 17 he vomited five times, and the pain in the epigastrium became more severe, and later quite agonizing, and was accompanied by nausea and exquisite tenderness; the temperature was 102.5, the pulse 90. The parotid swelling had entirely disappeared, but he had complete anorexia and obstinate constipation. February 18 the temperature was 100, the pulse 80, and he vomited twice; the pain and tenderness in the epigastrium were severe, but not so bad as on the day before. A small, hard passage from the bowels resulted from a large soapsuds enema. February 19, the temperature and the pulse were normal, and the patient was much better and hungry. There was no pain, but some tenderness in the epigastrium, which continued for two days.

In the foregoing cases, we have all the symptoms of an acute, though brief attack of pancreatitis, and in view of the great similarity, anatomically and physiologically, between the parotid and the pancreas, we are justified in considering that in these cases there was a pancreatitis due to mumps, similar in every way to the parotitis so commonly seen. This may be due to a metastasis, such as not infrequently occurs in the testes, ovaries, and mammæ; or, what seems even more probable, may be due to a secondary affection, the infective material passing through the stomach into the duodenum thus gaining access, through the duct of Wirsung, to the pancreas, as it undoubtedly does through Steno's duct to the parotid. The urine and feces were examined in both cases with negative results; however, when the pancreatic involvement is of such short duration, and is followed, as it undoubtedly is, by complete restoration of function, we could scarcely expect to find evidences of the disturbance in these excretions. There is no way in which this theory can be proved, but the notes of several other similar cases indicated that the explanation given accounts for the symptoms described. H. F. Harris[5] reported a case of diabetes that quickly followed the mumps in a man, aged 42 years; he also found several references in the literature to the fact that this happens not infrequently. It is well known that sometimes mumps produces permanent destruction of the parotids, and it is no more than reasonable to suppose that, in this instance, there was a pancreatic involvement which terminated in complete, or almost complete, destruction of the pancreas. This case tends greatly to strengthen the supposition in regard to the cause of the symptoms in the cases recorded in this paper, and to prove that instances of pancreatic mumps are not at all rare. This can not be proved, because it is seldom indeed that permanent changes result from mumps; and where these changes are not permanent, the organ, after a few days, returns to its normal condition, in which event all symptoms quickly subside. No mention of these cases is to be found in the standard text-books or in current literature, and notes of any would be very interesting.

The treatment of all forms of acute pancreatitis is purely symptomatic, except in the suppurative and gangrenous forms, where, if the condition be recognized, surgical interference may prove serviceable.

Chronic or indurative pancreatitis presents an overgrowth of the connective tissues of the gland with destruction of the parenchyma. A part or all of the organ may be affected. It is hard and indurated, with a smooth surface, and on section, large fibrous bands are seen surrounding or replacing the lobules of the glandular tissue. Fatty degeneration of the cells occurs and here and there may be seen small white spots, due to the accumulation of crystals of the fat acids or deposits of calcium salts, while Wirsung's duct is usually enlarged and sacculated.

The causes given are alcoholism, chronic inflammation of the pancreatic duct, due to repeated attacks of gastroduodenitis, or anything causing obstruction of the duct such as calculi or the pressure of adjacent neoplasms.

The disease begins slowly with the symptoms of chronic gastritis; then comes deep-seated pain in the epigastrium, occurring paroxysmally and accompanied by considerable prostration and great anxiety on the part of the patient. No doubt many cases in the earlier stages are mistaken for chronic intestinal indigestion with acute exacerbations. Jaundice may exist and is usually permanent; it results from pressure by the head of the pancreas on the common duct. Constipation is the rule, but may be interrupted by sharp attacks of

fatty diarrhea, and these stools may be colorless even when jaundice is not present.

Glycosuria has frequently been found in cases of chronic pancreatitis, and a few years ago it was thought that in this disease we had at last discovered the origin of diabetes; but this belief, however, was short lived. It has been proved that complete removal of the gland always causes marked glycosuria. If from one-eighteenth to one-twelfth of the gland remains intact, glycosuria is present but not pronounced, while if one-tenth is allowed to remain, glycosuria does not necessarily occur. Thus we see that before sugar appears in the urine as a result of pancreatic lesion, very extensive destruction of the gland must have been brought about. The changes in the gland are permanent, so the treatment must of necessity be to relieve, as much as possible, the symptoms. The administration of minced pancreas has been said to be of value.

Pancreatic calculi are formed of calcium salts, either the carbonate or phosphate, and are generally the result of a chronic inflammatory process of Wirsung's duct, or of some obstruction of the duct from any cause whatsoever. The stones vary greatly in size and number; they may be as fine as sand and be almost innumerable, or there may be one calculus as large as a walnut. Occasionally they ulcerate through into the stomach or bowel and may be found in the stool. They may be so large or numerous as to cause complete obstruction of the duct, in which event a cyst results, or they may pass through the duct, giving rise to pancreatic colic which may be indistinguishable from biliary, unless glycosuria or free fat in the stools should be discovered. Jaundice is common during or after pancreatic colic, thus making the diagnosis even more difficult. The treatment is the same as for gall-stones.

Pancreatic cyst may be congenital, but more frequently it occurs in adults. Von der Haan[6] has reported the only case of a cyst in a child, due to traumatism, the usual cause being an obstruction of the pancreatic duct or one of its branches. If Wirsung's duct is obstructed, one large cyst which may destroy the whole gland results, while if several of the contributing ducts are closed, we may have numerous cysts of small dimensions, the remaining portions of the gland being unaffected and functionating normally. Hematoma are not infrequently the origin of cysts, and traumatism also may result in cyst formations. The consensus of opinion now, however, leans toward considering these as instances of encysted peritoneal effusion, involving the omental bursa. The fluid of pancreatic cysts has a specific gravity of from 1010 to 1026, is of a grayish color, cloudy, and alkaline in reaction. Microscopic examination shows fat globules, epithelium, leucocytes and crystals of cholesterin and the fatty acids. If the cyst is large, we have pressure symptoms such as epigastric pain, jaundice and ascites in addition to the disturbance caused by the absence of the pancreatic secretions in the process of digestion. Vomiting and constipation or fatty diarrhea may be present, and if extensive destruction of the gland has taken place, glycosuria may appear. The tumor, when large enough to be palpated, feels round and smooth, is slightly movable and lies usually between the stomach and the transverse colon. Inflation of the last mentioned organs may aid in locating the cyst, but aspiration of the tumor is a very dangerous procedure and not to be advised, since the treatment belongs to the domain of surgery.

The next and last disease we have to consider is carcinoma of the pancreas. This is generally primary, and occurs more frequently in males than in females, and—as is the rule of carcinoma of any part—in persons past 40 years of age. Scirrhus is the most common form and the head of the organ is most frequently affected. The density varies; if the fibrous tissue predominates, it is very hard and, if degeneration has taken place, it may be even mushy. The neighboring organs and tissues are generally affected either by direct extension of the growth or by metastasis. If the duodenum is affected or pressed on, the stomach becomes dilated, and the portal vein may be compressed and give rise to ascites. Pressure on the inferior vena cava causes anasarca of the lower portion of the body; and if the common duct is involved, intense and permanent jaundice results, accompanied by dilatation of the gall-bladder and enlargement of the liver. If the tail of the pancreas is the seat of the growth, left-sided hydronephrosis may result from pressure on the ureter. (Fitz.)

The disease is seldom recognized during life, but there are some signs which if discovered may lead to a correct diagnosis. These are glycosuria, a deep-seated tumor in the epigastrium, and the presence of undigested muscle fibers in the stools when no diarrhea exists, which is always an indication of the absence of pancreatic secretions.

The prognosis and treatment of pancreatic carcinoma require no discussion.

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SYMPOSIUM ON DENTAL EDUCATION.*

DISCUSSION.

DR. G. V. I. BROWN, Milwaukee—I am sorry Dr. Hill is not present to take part in the discussion of this subject, as his paper is not a set of phrases put together for the day or the time, but is based upon his own practice. Dr. Hill, a physician, is better capable of discussing the pathologic conditions, local and general, that have relations to affections of the mouth than almost any dentist that I know. He sends a great many patients to me; almost every case is diagnosed, and very rarely, if ever, do I find reason to change the diagnosis.

DR. CRYER.—Being only a visitor to this Section, and not having heard all the papers read upon the subject, there is but one point on which I can speak. Throughout the reading and discussion of papers in dental meetings, there seems to be a tendency for the dental profession to find fault with the medical profession for their treatment of the dentists. In my association, as a dentist, with the medical profession, and when I attend their medical meetings, I am treated with the utmost courtesy; when the dental profession is spoken of it is with the greatest respect, and it is constantly recognized according to its worth.

It is claimed by your speakers here to-day that dentists are not recognized by the medical profession. Do we recognize the medical profession as we should? We constantly claim that dentistry is a specialty of medicine as is ophthalmology or laryngology; yet, in Rhode Island, a graduate of the University of Pennsylvania in medicine and dentistry was arrested and taken into court through the instigation of the dental profession of that state, for practicing dentistry without a license. He had taken out the license to practice medi-

*This discussion is on papers presented before the Section on Stomatology, at the Fifty-first Annual Meeting of the American Medical Association. THE JOURNAL, vol. xxxiv, page 1661 et fol.

cine, and claimed that he had the right to also practice dentistry on account of the medical degree and the license to practice medicine, just as the ophthalmologist and laryngologist would have had a right to practice their specialties. The court decided in his favor, however, giving him the right to practice dentistry. If the dental laws of Pennsylvania could be enforced, they would compel a medical man to attend a dental college and pass an examination with the State Board before he would be permitted to practice dentistry; he might treat pulpitis but would not be allowed to fill a tooth. In fact, I do not know where the line would be drawn. Many of the state dental laws throughout the United States in themselves acknowledge that dentistry is not a specialty of medicine, and still these laws were usually asked to be passed by dental societies.

DR. J. L. WILLIAMS, Boston—I have a full report of the case in Rhode Island, that Dr. Cryer has mentioned. The judge quoted some dozen precedents and the laws of certain states to uphold the decision which he made.

The papers which we have heard all tend to prove the need of a sound medical education as the foundation of a dental practice. This is not new but rather a reversion to original conditions. In 1844, when I wanted to study dentistry, I found no reputable dentist who would accept me as a student, unless I would first study medicine and I therefore spent three years getting a medical degree before entering on the study of dentistry. This shows that dentistry, even at that time, was considered by many as a specialty of medicine, and that it was recognized that a dentist should be grounded in the general principles of medicine and know how to apply them to his specialty.

In 1876 the American Academy of Dental Science passed the following set of resolutions upon this subject:

WHEREAS, Dentistry is a specialty of the science of medicine,

Resolved, That a thorough medical education is essential to the most successful practice of it.

Resolved, That we deem it expedient and for the best interests of the practice of dentistry, that existing medical schools enlarge their courses of instruction so as to include efficient instruction in the specialty of dentistry, in order that it may be placed on an equality with other specialties of medicine.

In 1890, when I was chairman of this Section, in my opening address, I used these words: "In earlier years there were only a few qualified practitioners who devoted their skill to the treatment of the oral cavity, while the larger number gave their attention to the teeth and so the specialty was called dentistry, but at this day when the knowledge of the principles of medicine and surgery is more general than formerly, and more commonly made available in the treatment of the oral cavity, the term 'dentistry' seems to be too limited and I suggest the use of the word 'oristry' instead." Stomatology has since then been adopted as a better name for the specialty whose field is the mouth. I am glad that the whirligig of time is bringing around the idea that the knowledge of all the basal principles of a medical education is necessary for a dentist. It does not so much matter what the title is that distinguishes the profession, so long as the members have the knowledge necessary, but it would be better to all have the medical degree as a guarantee of the possession of that knowledge. Many of the members of the dental profession already have it, yet many excellent dentists have only the single degree of D.D.S. It is true, however, that no specialty of medicine can be separated from general medicine, for the body is one, and all parts are sympathetic with all others and without knowledge of all the diseases, one can not be properly treated.

JAS. MCMANUS, Hartford, Conn.—I have been interested in all the papers, especially the one read by Dr. Davis. I had the pleasure, in 1865, of hearing Dr. Davis read a paper on the same subject in Chicago. As the paper was read yesterday containing extracts from the other, pleasant recollections of the enjoyable time on the occasion of the former paper came up in my mind and the cordial welcome and glad hand which Dr. Davis extended to every dentist on that occasion. I think Dr. Davis raised the proper sentiment at that time and I have lived up to it ever since. Men active in educational work in the profession of dentistry have been working, as well as they could, up to the line laid out by Dr. Davis, and in my opinion there is no college in the country where a student can not get a thoroughly good education if he will. The trouble has not been with the colleges, so much as with the students; a great many have attended dental colleges without the necessary preparation; but that is a question of the past, the future seems to be quite clear. The student now knows that he has to face a very strict examination, not only in his own college, but also after he leaves college, at the hands of the dental examiners.

This leads me to speak of the Rhode Island case: There was no reason why that matter should get into the snarl that it did, had dental examiners not treated it in a narrow, unreasonable way. I think that while I am justified in saying that the teachers in dental schools are all earnest, honest, conscientious men working for the best interests of their students, the examiners on the other hand have sometimes not been quite so honest and they have been too desirous sometimes to show their power and authority. I think too much has been said about the need of education in dentistry. The colleges are improving as fast as they can, and will do their work thoroughly. In practice, however, it must be dentistry first and oral surgery next. Oral surgery is really a specialty of dentistry. There must be specialists for its practice who will be competent to act as surgeons, but the bulk of the profession will always practice dentistry not oral surgery, but the better grounded a dentist is in the principles of medicine the better dentist he will be as well as better oral surgeon.

DR. E. A. BOGUE, New York—Dr. Williams has brought to my mind the condition of the dental profession in Austria. It is necessary there for a man to be a qualified physician before he can practice dentistry and to become a physician requires seven years, including the academic training. The result is, as may be readily imagined, that dentistry has not advanced very far in Austria. In fact, we hardly know to whom to refer for a good dental operation, those of our patients who may be traveling in that country.

I am a firm believer in the theory of natural selection. Out of two hundred graduates in medicine not more than fifty will take up surgery and probably not more than fifty will take up the practice of dentistry. If a man leans toward surgery, when he is graduated he will take it up, and the same with dentistry. The old rule, as the twig is bent so the tree will incline, governs the matter powerfully. My own inclination led me to have my son go through the medical course first and the dental course afterward. I want him to acquire the manual dexterity for dental practice; but I do not want him to begin practice till he is well enough grounded in the principles of medicine to recognize disease even if he does not treat it, and to direct such patient where to go for needed treatment; and I want him to recognize disease in his specialty and treat it thoroughly and understandingly, and not to confine himself to the practice of dentistry.

Dentistry had two origins, one mechanical, the other surgical. We look back to our barber ancestors as surgeons. A large and very reputable class of practitioners have given their entire attention to the mechanical branch including all operations in the mouth, requiring manipulative ability of a high order; while a smaller class give their attention to surgical diseases of the mouth and associate parts. In Dr. McManus' remark that people want dentistry, presumably he means to refer to operations performed on the natural teeth in the way of filling, regulating, possibly extracting (I hope not often). They also want in a dentist, as I understand it, the ability to understand the epithelial cause of diseases of the mouth, the power to detect sarcoma, to direct the regulation of the teeth; they want him to know on what ground he is treading when he undertakes the movement of these valuable organs which can not be replaced if lost.

Just where we shall draw the line is uncertain but this is sure, preliminary examinations are far and away above what they were twenty or twenty-five years ago and I hope they will continue to advance.

DR. W. H. TODD, Columbus, Ohio—I have given the subject of education comparatively little thought and do not feel like taking any part in the discussion. My experience has taught me that medical men who are skilled and worthy men are usually not wanting in courtesy to the dental profession. I find they are willing to receive help from me. It is the poor physician who is afraid he will lose a dollar, that is afraid to call or send for his dental neighbor in consultation or treatment.

DR. G. LENOX CURTIS, New York—I regret not having heard all of Dr. Marshall's paper. What I heard was to the point and full of helpful suggestions. The two questions that are under consideration at this session are: How are we going to establish a more satisfactory system for dental education? And how are we to secure in medical schools the teaching of disease resulting from affections of the teeth? It seems to me that at least a high school education is essential to meet the preliminary requirements of a dental or medical education. Dental students should be selected from among those possessing natural tendency for mechanics as Dr. Litch has suggested. I feel sure that he who possesses this tendency and a medical and dental education is best fitted to practice and advance the science of dentistry. Mechanics is not so important to a medical practitioner unless he follows surgery. I think we have too many medical and dental schools; the profession, like many business enterprises, is congested. What we need is a higher standard for graduation. Schools connected with universities afford greater advantages. Instructors should be selected on account of their recognized skill and aptitude to teach and not for political or financial reasons. I believe that a large percentage of our schools is organized and maintained for personal aggrandizement. These conditions do not bring about the best results in education. I am satisfied that many of the professors are qualified to teach and are working diligently and heartily for the education of their students, but I do think there are many incapable of meeting the requirements of to-day. Their instruction, except the fundamental principles, is a recapitulation. My experience in post-graduate medical teaching satisfies me that medical students, with few exceptions, have received little or no instruction in the treatment of oral diseases. Because of this fact medical schools should have dentally educated physicians on their staff. In order to bring this subject forcibly before medical faculties, careful preparation should be made. The distribution of several good papers, bearing upon this subject and circulated among the faculties would show them the importance of considering this step. I would also suggest that action be taken in this Section and at this meeting for an appointment of a committee to consider the best means for presenting this matter to the medical profession. Dr. Rhein's paper is a very strong one, but I consider it too long and believe the latter half weakens his argument on account of so much dental work embodied in it and that only the first part of his paper will be interesting to medical men. The medical student does not require a knowledge of dentistry only so far as it enables him to find the cause of reflected trouble and to know when to refer his cases to the dentist. There is material enough in Dr. Rhein's paper for two exeellent essays on different subjects.

DR. RHEIN—Would Dr. Curtis make more clear what part of my paper? I confess I am unaware, where he wants to draw the line as to the portion of the paper I read that does not have distinct bearing on the subject. I wish he would make it more clear to me.

DR. CURTIS—I would like to go over Dr. Rhein's paper with him; I think I could point out to him the part which would not particularly interest medical men. I can not now say just where I would draw the line, but I think at the point where he brings in so much dental work—I think this part of his paper would become tiresome and likely to confuse them as to what should be taught in their schools. I believe that this and similar papers should be subjected to a committee whose duty it would be to see them properly edited. As I recall it, he says dentistry is deficient and deteriorating and that dentists are not up to the standard of fifteen or twenty years ago. I think Dr. Rhein has overlooked the fact, that during this period dental institutions have been established in nearly all parts of the world and that their students are approaching the standard of American students, and it is for this reason that the knowledge of the American dentist does not seem supreme nor stand out so clearly against the horizon as it did twenty years ago.

DR. RHEIN—I fear that Dr. Curtis has listened with one ear slightly closed, or he could not have made such a criticism. I had tried hard to make the paper as condensed as possible and have received a very flattering letter from the secretary of the section commending it.

In considering the subject it is impossible to divide the preliminary education at any point. The idea as expressed yesterday and again to-day, that it would be far better for the technical training of the dental specialist for instance, if he took his dental degree first and his medical degree afterward, shows a lack of appreciation of what proper education should be.

When a man or woman is going to have any part at all in the professional field, it is almost absolutely necessary that the manual training should be commenced in the preliminary educational career; all the improvements in preliminary educational methods have been in this direction. Taking that position then, to give the student an education in the technique of the eye, ear, nose, genito-urinary apparatus, etc., and after he has acquired that picked-up sort of knowledge, to say to him, "now study the general practice of medicine," would be like placing the cart before the horse. It would be like teaching a child fractions before the principles of addition and subtraction. That is the way it looks to me, and I think, to reach a distinct understanding with general medicine, so that our specialty may be placed on the same line as others, the medical man must get his education in general oral knowledge, as he gets his education in regard to the eye or to the ear, not to practice it, but to understand it sufficiently to know whether others practice it well or not. There are a large number of medical men of good standing who have educated themselves in the diseases and conditions of the mouth, and who therefore show a due appreciation of what is due to dentistry, but they are a minority of the medical profession. The average physician has a fair appreciation of the condition of the organs practiced by other sepcialists but no such appreciation of oral conditions.

The part of my paper which Dr. Curtis thought not applicable to the subject was where I showed there were two sides to the question; where I took up the changes that would accrue to the medical profession and to the benefit of our specialty. As far as my observation goes, the position of American dentistry to-day appears to be deteriorating as compared to the rest of the world, and does not compare as favorably as fifteen years ago. I believe this is due to the point I wanted to raise in my paper, viz.: that dental work is not performed by capable men as well as it can be; and to use a very strong expression, that too frequently the confidence of the patient is abused because the dentist finds it more lucrative to serve more patients in a given space of time than it is possible for him, should he do his best by all. Now that was the portion of the paper that I think he considered foreign to the cause.

The parts of this subject are so intertwined that it is impossible to say that what is good for the medical man may not be good for the dentist. What we should consider in a matter of this kind is the benefit of the community at large, and our efforts should be to do what shall be for the benefit of our patients.

I am most anxious that the standard of American dentistry should be kept to the point it has reached, and it can be kept from deteriorating most surely if the medical man who tends our patients as their physician has such knowledge of dental principles that he can say whether the dentist was prostituting his ability as a professional man or not.

DR. HENRY D. HATCH, New York—I do not agree with Dr. Rhein that a physician's education on the conditions of the mouth should be such that he should be able to judge whether the dentist's work was done as it should be; but that he should be educated in the principles of oral surgery and pathology so that in a case of neuralgia, he would know

whether to send the patient to a dentist, or to treat the case himself. I do not think the physician should feel that it was for him to pass upon the dentist's work. A lady came to me from an adjoining city. She had a gold crown on a central incisor. I removed the crown, not that I expected to find anything wrong with the tooth, but because the crown was so conspicuous. Under the beautifully polished crown I found a broken brooch extending into the pulp. Not until I had removed this brooch did I learn that the lady had had neuralgia. I give this instance to illustrate how impossible it would be for a physician to judge the dentist's work. I could not have known that anything was wrong till the crown was removed, and certainly a physician could not. In my own personal treatment by physicians I had nothing to complain of. They always treated me on the plane of equality, as a specialist. Whether others are met in the same spirit I do not know. I think, that as a rule, the dentist is correctly looked upon by the physician. When the average dentist makes himself more competent and thorough he will get the credit due him.

The time when a dentist should get the manual training needed in his practice is a difficult question to decide. Some think he should get the M.D. degree before studying dentistry, This would bring him to 24 years of age and perhaps 27, before he gets the baccalaureate, M.D. and D.D.S. The man who reaches the age of 24 before he studies dentistry will never make a good dentist. It would be better were the training to begin before he leaves the high school.

DR. JOHN S. MARSHALL, Chicago—About three or four months ago, the secretary of the Section called on me to talk over the question of dental education, and suggested a symposium on the subject. As there were two opinions prevalent in relation to it—one that the dentist should be medically educated, the other that a medical education is not necessary, it was thought expressions from a few of the prominent men in the profession on the subject would be of great benefit. Dr. Talbot then invited these gentlemen to prepare papers. He called on Dr. Davis for a paper, because he knew his position, which is as follows. If the dentist is a specialist in medicine he should be educated as a medical man. He also spoke of the status of the profession and of its recognition by this ASSOCIATION and of the arguments which were brought to bear on this ASSOCIATION in order to obtain that recognition. I believe this Section has done as good work for dentistry as had any dental association in the United States. The character of its papers are as good and better than those presented before the National Dental Association. Besides this there is no politics. We come together for purely scientific work and labor through the whole session to that end.

I am sorry that Dr. Taft's paper is not here. Dr. Taft was asked to write on "Preliminary Qualifications," a very important subject. I touched it lightly in my own paper under the head of "Recommendations." I think that to-day entrance qualifications are too low and ought to be raised. The best way to raise them is to require a medical certificate. As to when the manipulative skill so absolutely essential is to be acquired, I think that Drs. Bogue and Hatch lost sight of the fact that 50 per cent. of the medical student's training is laboratory work which requires his fingers and his eyes to be constantly employed. He gets as much manipulative training except in gold work as does the dental student. He is trained from the first, in the medical class, to use his hands and eyes, and to use them intelligently. I have always held to the view that the only correct way to educate a dentist is to first educate him in medicine, then in dentistry, his specialty.

In Dr. Peck's paper great stress was laid on object teaching. He spoke of vivisection to show the action of drugs and its great value in impressing on the mind of the student the action of the heart, lungs, etc. A student who has seen these things never forgets them. It makes a tenfold deeper impreession on his mind than reading.

Dr. Brown's paper was along similar lines, though he tried to show that the two courses of instruction, medical and dental should go together. This idea was carried out in one of the schools in Chicago. The plan was to have the medical and dental students take up the very same course of instruction and the same examination, teachers not knowing the medical from the dental students. In the first and second years the dental students had some training in the mechanical laboratory, and the third year was devoted to purely mechanical and operative work. He believed that that school turned out some of the brightest men to be found in the dental profession to-day.

Dr. Steeves laid some stress on the necessity of a medical education. She has not this education herself, but has been in practice long enough to discover how much better it would be for her if she had.

Dr. Hill, after pointing to the interdependence of the dentist and the physician, said, to-day in most of the dental colleges they are teaching technique to the exclusion of science, turning out splendid jewelers and artisans, but very poor scientific dentists.

I do not desire less time given to manipulative training, none give too much time to that, but the students should be more scientifically trained. One young man, a graduate of one of the best scientific colleges of the country, being asked, What would you do, suppose you were called upon to see a child in convulsions from an erupting tooth? said, "I would give 15 grains of chlorate of potassium." Being asked what he expected to accomplish by such a dose, he said he didn't know. Another case: A lady who had been an assistant for seven years in a dentist's office took her little child to a dentist, also a graduate of a first-class institution, to have him examine the central incisor teeth. The child had been ill and the enamel was unformed on the cutting edges; she took the child to find out whether it was better to file these teeth down or allow them to wear down. The dentist said, "It will be only a little while before the enamel will grow over the ends, just see how it is growing now. Both of these young fellows I am personally acquainted with, and they are both fine manipulators. They make as beautiful gold fillings as any man in this room. These are facts, and they explain why so much stress is laid on the need of scientific training. I do not say it was the fault of the teaching in the colleges that these men did not have this knowledge. They probably were taught them, but in the examinations there should be some way of finding out whether they were learned or not. It's a disgrace to the profession, and I feel ashamed that any school should graduate such men. In regard to what Dr. Rhein said, we almost always hear when anything is said of indivdual training of the dentist that medical men are to blame for their condition. "If the gentlemen who applied to the medical college in Baltimore, wishing to establish a dental chair had had their offer accepted, there never would have been any dental schools." Ask yourself the question: How much science was there in dentistry in 1846? Was it not a handicraft, a purely mechanical calling? What was known of it scientifically at that time? Compared with what we have to-day, it was simply nothing. He did not think it was right to blame the medical colleges for this refusal. They acted according to the best light they had at that time.

In his paper Dr. Rhein called attention to the fact that the principles of dentistry should be taught in medical schools. This has been done. The first medical school that did it was the Cincinnati School, beginning in 1870 or '72; the Syracuse Medical Department was the second in 1879. Dr. Marshall had the honor of being elected to fill this chair. In Chicago all the medical schools established a chair of dentistry in 1882 or 1883. I was elected to the chair in the Chicago Medical College. All these schools, with one exception, still maintain these chairs. I do not know whether the medical schools in New York have such chairs or not.

DR. JAMES TRUMAN, Philadelphia—The question as raised by Dr. Andrews, seems to me to be one of the most important that the dental mind can take up at the present day. I continually ask myself the question: "Whither are we drifting? Are we drifting toward medicine, or are we going back to the original standpoint of dentistry?" I believe that the profession is gradually drifting toward the M.D. degree, and that it will not be many years before dentists will lay aside the D.D.S. entirely. I am sorry that this is so, for I believe that in proportion as we aspire to build up our curriculum so as

to produce M.D.'s, just in that proportion will dentistry deteriorate. This view is based upon an experience of a good many years as a dental educator. I have found that in proportion as the standard of education has been raised, just in that proportion have we deteriorated in our dental acquirements. This may not be an agreeable thought to many, but we can not resist the logic of facts and I look forward to the result of further advancement with dread. Dr. Marshall stated that in proportion as a student is trained in medicine he makes a better dentist. I know that this was not a fact. I have helped to train many medical men in dentistry, but they were almost universally failures as far as dentistry was concerned. It has been well stated that the older a man is the more difficult it is to develop manipulative skill. The work in medical colleges does not teach technical ability. A man can only be taught at the bench to make a success in dentistry. I feel very strongly on this point, and am sorry I have not time to elaborate it, but to me it is very clear that if we go on and add every year to our curriculum, we are going to make very poor dentists. I would like to get the question down to practical details and discuss it in its broadest aspect. In my own school the dental students work right along with the medical, for the first two years, and since this rule has been adopted, I think they made poorer dentists than ten or fifteen years ago. I hope the Section, after further consideration, will see the question in this light, as I am convinced that dentistry is losing ground rapidly by so enlarging the curriculum that the students can not digest it.

DR. A. E. BALDWIN, Chicago—I am glad to have heard Dr. Truman, though I do not agree with his conclusions. I am going to speak of the two professions drifting together, but with a different conclusion. The trend of the two professions seems to be to get closer together. It seems contrary to reason to say that a man will not be better because of more extended knowledge, or in other words, that it will take from my manipulative ability, to know of the physiology,pathology, or the histology of the parts of the human frame upon which I work. It seems to me that the greater my knowledge in these particulars the greater will be my efficiency as a dental adviser. There are a great many things to be taken into account, but these are vital.

I find the dentists are gradually getting over their antipathy to medical men. They are generally recognizing the fact that we are both on the same ground. As we get over this feeling we shall find ourselves becoming broader and better professional men.

Dental education is not primarily manipulative, but our schools should aim to teach, first, what the conditions we find in the mouth mean, and to discover their causes, and the methods of ameliorating them; besides this it is important the student should be placed in a receptive state, so that he may go on with his dental education after he graduates. I do not want to detract from the importance of the manipulative skill. This the student must acquire, but the other is of primary importance.

I would like to know why a medical graduate is a poorer dentist than one who is not. This statement was made fifteen years ago in connection with a school started in Chicago for the purpose of teaching dentistry to medical men only. One of the teachers in that school made the statement at a dental convention several years afterward that the students of that school were very hard to get along with. They could not be taught much, as they thought they knew all there was to know. My private opinion is that with a different corps of instructors the students would have had a different experience. If the teachers had been fitted to teach them the advanced course beginning where the medical course had stopped, they would have been succeessful, but to teach graduates of the medical college a new pathology, a new bacteriology, and a new physiology was of course uphill work.

The best way to get recognition from medical men is to get in line and recognize work done by them and get our profession in line to advance to the knowledge medical men have. Dr. Rhein speaks of the importance of manual and technique training. It seems to be proper that these should be conducted in a co-ordinate department; but in any case we can not make a good dentist of every student. Some men would be successful as physicians who would never succeed as dentists; others would succeed as dentists who would fail in medical practice. The selection should be made before the student enters college. In truth, not all dental schools are conducted on a professional basis. Some of them are purely financial institutions with the idea of getting as many students as possible; as long as we have that kind of schools we must expect to have trouble with the product.

DR. W. B. HILL, Milwaukee—I want to plead for the dental education of the physician. You have said he ought to be educated, but I do not know who is going to educate him. I am willing to sit at the feet of any one who will teach me about the mouth. A considerable proportion of the medical profession are looking in vain for some one to teach them. There are those who are competent, but they are not common; and they have not been brought to us. The dentist should be as is the oculist; and physicians would go to him for knowledge as they do to the oculist. We do not go to our fellow practitioner to learn of the eye, nor do we go to the oculist to learn how to fit spectacles, but we do ask him to teach us of the eye that we may know and recognize disease, that we may note disease in preliminary stages, and refer such cases to the proper one for the work. This is what we ask of dentists as to the oral cavity.

I have been studying dentistry for several years and to a certain extent have established myself as a censor on dental work. I not only refer patients to the dentist, but I take them to the dentist and together we determine what is to be done, and together we watch the results, and I am happy to say that we generally cure the patient. But in cases where the work is not done in consultation, work that is referred to the dentist, I think it proper, if the doctor has any dental education, any knowledge of the mouth, that he should see that the work he has ordered is done correctly. I have had a few cases in my practice that emphasize this necessity. One of my patients came to me from a dentist. She had had a tooth filled and was suffering intensely. The dentist told her that if he (Dr. Hill) would give her a little morphin to stop the pain for a few hours, the tooth would be all right; he refused to furnish the morphin and sent her back to the dentist. The end of the matter was that the filling was taken out and the tooth properly treated before the trouble was settled. I relate this to show that physicians ought to know when patients are properly treated by dentists. It is true they might not discern some of the hidden things, but they would be pleased to discern the hidden things that we are capable of if they could be educated on the line of diagnosis. It is no harder for a physician to diagnose from symptoms the involvement of a tooth pulp or the presence of a calculus in it, than it is to determine inflammation of the appendix. I make the plea that medical men should be educated, and the dental profession should train up a lot of men to be specialists in the oral cavity so as to train the medical profession; they need it. It is true in the medical profession we make slighting remarks of yours. This is caused primarily by the ignorance of the physician making the remark, and secondly by the poor training of large numbers in the dental profession.

Hippocrates stated, I believe, that medicine was an art, and there are people who think that if Hippocrates made this statement that it was the truth and has remained true through all these centuries, but it is not true now, although it was then. Now it is a science. Dentistry is a combined science and art. These two can not be divorced, the science being the science of medicine. If we would teach scientific dentistry it is impossible to divorce the mouth from the rest of the body. It is a part and parcel of it. The same blood that circulates in the mouth and teeth circulates in the extremities, heart, liver, and kidneys. If you would be a man to whom we can trust the treatment of the oral cavity, with all its ramifications, with all its nerve supply, with all the possibilities for irritation and remote nervous manifestations

you must understand the whole body, and make a study of it in its completeness. If on the other hand your profession is to be one which has to do only with treating the teeth and filling cavities, then it must take the position of being an art merely. The work must under the directing hand of a physician who is competent to judge of the conditions of the mouth as well as the rest of the body.

It has been said that to have a practitioner of dentistry take a complete course in medicine would require so many years he would be too old to acquire the technique which is necessary in dentistry. I believe not that a man should first make of himself a physician, begin practice, then change his mind and go back to learn dentistry, but that he should begin to study with the idea of being a dentist in the highest acceptation of the term, with an educational foundation broad enough to reach any height in his chosen profession. The dental and medical training can be done at the same time and there is no reason it should not be. I do not know who was responsible for the divorce of the dental and medical professions; the question is, how shall we get together? I believe it can best be done by such a course of study as I suggest. W can work toward it and bring the dental and medical students together. We can educate them in the same classes and make them pass the same examinations, and the two boys who have stood shoulder to shoulder in the lecture room will have respect for each other in professional life.

I do not believe with Dr. Truman, that a higher education is a menace to the profession of dentistry. A dentist is a scientific man who has not only his head trained, but also his heart and hand; if this be true, he can not be too highly educated. He can not have a culture too great to enter this profession. My ideal dentist stands head and shoulders above the practitioner of medicine—a man who knows all the physician knows, and his special knowledge beside.

I suggest that we set up the high ideal of the specialist in medicine, and secondly, take in for education the very best talent, a scientific mind, a cultured gentleman, and a deft hand, being the requirements; and that we carry on this education of the physician and dentist if possible, in one institution, giving them both the same foundation, allowing the dentist to add to this the practical work in the laboratory, in the infirmary, in the hospital and in the clinic, until he stands a specialist who is competent to consult with any physician, and thoroughly capable to carry out the desires of the physicans in the treatment of their patients.

DR. WILBUR F. LITCH, Philadelphia—I can confirm from my own experience the statement made by Dr. Truman, that a physician entering a dental school usually makes a very poor dentist, but I do not accept the conclusions which Dr. Truman drew from this fact. In the selection of a vocation or of a specialty, the line of least resistance is followed, and as a rule, that is the line of personal aptitude. The man who, after passing through his school-boy days, determines to be a physician is probably not very highly endowed with mechanical skill. The same may be said of the man who resolves to devote his life to commerce or other non-mechanical callings. Hence, I do not think that the physician is more likely to make a poor operator than the man who comes from trade, the pulpit or the bar. The physician makes a poor operator because he has not been trained from his youth in manipulative processes, not because he has studied medicine. I fully agree with Dr. Bogue that the highest skill in technique, that perfect adjustment of co-ordinate muscular movement which constitutes knack, is attained only where the training is begun early in life. This is well illustrated in piano playing, perhaps the most difficult technique the human organism has been forced to master.

Dentistry is peculiar in the fact that it requires such a high degree of complex technical skill, conjoined with a good degree of scientific knowledge, and the problem is how to arrange our courses of instruction so as to secure these combined results. If we start with medical instruction without any preliminary training in dental technique, there will be that loss of skill which is the result of insufficient training in early life. It is, however possible to arrange the courses of study so that this objection may be, in a measure, overcome. Possibly most of those present have seen the paper of Professor Bowditch, read in Washington before the Medical Association, entitled, "The Medical School of the Future," in which he outlined the difficulties of the situation as regards overcrowding, and the overrating of medical courses, and stated that the probable outcome of the present situation would be courses elective in their character. This experiment will probably be tried first in Harvard, and will give us an opportunity to judge of such a system as applied to stomatology, for I do not doubt that in these medical universities, as they will be called, stomatology will be one of the specialties taught. It is to be hoped that the experiment will be tried and prove successful, not only because it will give us a better class of men in dentistry but because it will be a stimulus to existing dental schools, which will be compelled to advance their courses to the standard of the elective course system, or sink to an acknowledged subordinate place and perhaps cease to exist. Allusions have been made to the ideal instructor as the one who endeavors to teach general principles as well as concrete facts. My observation is that the general instructor of to-day is the one who thoroughly drills men to pass examinations by hammering facts into them, and that it is the quiz master and not the professor who commands the largest following and most earnest attention.

One great trouble we have had and still have in advancing the course of instruction is the indifference of the student to scientific knowledge. Too many of them come to us with the idea that dentistry is simply a money-making trade, their highest aspiration being to learn to put in well-finished gold fillings; to such men dental science is superfluous and useless. I find that the most effectual stimulus to better scientific attainment on the part of students is the fact that in addition to the faculty examination they are compelled to go before state boards. This at the same time has forced upon the colleges more strict requirements and thus nas accomplished a double good.

DR. R. R. ANDREWS, Cambridge, Mass., has said that the elective system of the universities was just what was needed. As the university makes every man take certain studies to get his degree of A.M. or A.B., and then other studies in elective courses if he wants special degrees, so let the medical university take the medical course to get the M.D. degree and special courses for dentistry and other specialties. There is so much manipulative work in the study of general medicine that I can not conceive how a man could lose manipulative power by going through the medical course. If he has the intention from the first take up dentistry, his attention will be fixed upon dental work and his opportunities for it will be sufficient.

DR. E. A. BOGUE, New York—I hope that Dr. Litch will use all his persuasive powers of either tongue or pen to persuade the examining boards of the future to so examine the studnts turned out from our colleges as to determine not only what they know, but what they can do, and let their decision be based on the latter as much as on the former. Too often it appears as if the examination is simply to learn how many facts have been crowded into the student's head, not whether he can make any use of the fact. Dr. Kimball has said that the dentist owes a great debt to the community, not only the professional community, but the people at large among whom he practiced, also to his assistants, whom Dr. Kimball called his associates; and he carefully went into the *modus operandi* of choosing and training those assistants so as to first be assured it is a worthy man who is to succeed you in serving the public, and to see that as far as your effort will go, he shall be thoroughly equipped for the service. My old preceptor used to say that M.D. meant a miserable dentist. Dr. Varney, because he was a good dentist, became a good military surgeon.

DR. ALICE STEEVES, Chicago—During my early experience I spent three years in hospital life, and the skill I obtained there in manipulating instruments has been of much benefit to me in dentistry. I think the dental and medical student should be educated in common.

DR. G. LENOX CURTIS, New York—We work all around the subject how to make dental students. My idea is first a good general education, then the medical education, then select those who have mechanical aptitude to study dentistry. Mechanical and literary ability do not go hand in hand as a rule, but we do not find men with marked mechanical aptitude among physicians. The student of the classics makes the best physician, the mechanic the best surgeon, and dentistry is surgery. Dr. Rhein says dentistry in America is deteriorating. That this seems so is because of the advance of dentistry in other countries, so our great knowledge does not seem so supreme as it did a few years ago. European dentists are being educated and they have good dental colleges now. So American dentists and American dental institutions do not stand out so clear against the horizon as they did fifteen years ago.

DR. M. L. RHEIN, New York—After listening to the admirable remarks of Dr. Hill, I wish to say that Dr. Hill's words were just what I would like to have said on the subject. I recognize my own inability to express my sentiments as well as Dr. Hill has. Some seem to have thought from my remarks that I feel that members of this Section have received slights in their connection with physicians, but I did not mean this. In my own case I have had no such experience. I was merely trying to draw the distinction which Dr. Hill had made so explicit. Dr. Marshall spoke of the estabishment of dental chairs in medical schools in Chicago. In my paper I noted the advance of the schools in the West over those in the East and limited my remarks to the conditions in the East. In this respect, we must recognize the superior advancement of the West. I have no knowledge at the present tme, after a great deal of inquiry, of any such education being given to medical undergraduates in eastern medical institutions and I specially limited my remarks in that respect to the East. The necessity for such a paper as mine was made much more marked by Dr. Marshall showing that this ground is covered in the city of Chicago, and is not covered in our eastern medical colleges.

DR. E. S. TALBOT, Chicago—I have been a disciple of Dr. Davis for the last three decades and have been looking forward to the advancement of dentistry and the amalgamation of the medical and dental professions. The fact that diseases of the mouth and of the general system are better understood is the underlying cause. Spencer says there is evolution in everything. There is evolution in dentistry, and those colleges and teachers who do not keep pace with this evolution must take a back seat. Dental colleges will have to take a step in advance and meet the issue. This law can not be overlooked. In this discussion, as always, the manipulative part of dentistry comes to the front. Is it possible that dentistry is based entirely upon plugging teeth? Do not diseases of the gums and of alveolar process constitute an important branch of dentistry? They are more prevalent than decay of the teeth and more to be dreaded. These diseases of the gums and alveolar process follow every disease of the human body, and are produced by changes in mode of living, changes in climate as witness our soldiers in Cuba and the Philippines and the workmen on the mountains in Switzerland, 2600 feet above the level of the sea. If this be true, the dentist must know about the diseases in the human system to practice successfully. Therefore, he must have a medical education. Dental colleges according to the present course can not include medical branches in their curriculum. Dr. Taft has informed me that the University of Michigan has increased the dental course of study to four years, of nine months each with an entrance qualification of a high school education. When all the colleges become able to not only give their students mechanical skill and manipulative ability, but also the necessary foundation knowledge of anatomy, pathology, physiology, chemistry, bacteriology, etc., their graduates will be thoroughly fitted to practice their specialty.

DR. A. E. BALDWIN, Chicago, introduced the following resolution; seconded by Dr. Curtis:

WHEREAS, It seems evident from the papers presented to our Section, and especially by the able paper of Dr. N. S. Davis that there should be a closer union between the medical profession and our specialty, and

WHEREAS, To bring this union closer it seems advisable that there should be established in all our medical colleges chairs on stomatology; therefore be it

Resolved, That we elect a committee of seven, consisting of the Chairman, Secretary, and Executive Committee of this Section with two others—of which committee our Chairman and Secretary shall be Chairman and Secretary respectively—to use all legitimate efforts to bring about the above results, and to work for the coeducation of all students in the foundation principles of medical education.

The Chairman appointed Drs. W. E. Walker, of Pass Christian, Miss., and James McManus, Hartford, Conn., on this committee.

SPECIAL ARTICLE.

RELATIONS OF PHARMACY TO THE MEDICAL PROFESSION.*

VII.

ARE TRADE-MARK NAMES NECESSARY.

The object of this series of articles is to try to reach a better understanding than now exists between medicine and pharmacy. That the former must depend on the latter to a large extent is acknowledged, and it is to the interest of both that present conditions be changed. The office of the physician is daily being encumbered with samples of all kinds and varieties of medical preparations, most of which are simply nostrums while some are of therapeutic value and a real advance from a pharmaceutic point of view. It is as much to the interest of honest scientific pharmacy as of medicine that the secret nostrums be banished, and these columns are open to the pharmacist who is willing to assist in the movement, or who may feel aggrieved at any statement made. For this reason space is gladly given to the following, especially as it gives a chance to discuss one phase of the subject.

NEW YORK, June 22, 1900.

To the Editor:—It is in the best interest of medicine that original investigation by competent persons should be encouraged. Very much of the advance in therapeutics is traceable to the work of those who have made a study of therapeutics, physiology, chemistry and pharmacy, and applied the knowledge gained to the perfection of such remedies as are decided improvements in medicine. Much of this kind of investigation has been carried on in the laboratories of those who have introduced these special preparations to the profession, and have relied for their reward upon the improved effect of their products in the hands of physicians.

There are many cultivated physicians who make a specialty of original research in pathology and diagnosis; these have contributed very largely to the great advance made in these studies of late years but unfortunately, the study of therapeutics has not made the same progress. I fear that the reason for this lies in the fact that the study of therapeutics and physiologic chemistry, as well as other branches of chemistry, have been too superficially taught.

If we stop for a moment to consider that a physician is constantly called upon to treat diseases, by chemical means, the gravity of the oversight will be apparent. The fact that the vital element in the organism is also a factor, while it does not nullify the argument, very greatly increases the complexity of the problem. Thus the lack of an equal knowledge of these two last links in the round of medical acquirement—therapeutics and chemistry—often handicaps the investigator in such a manner that he is unable to utilize his exhaustive studies in other directions, by his unfamiliarity with that essential and crowning knowledge which enables him to apply in a scientific manner, the indicated remedy to the morbid state which he has demonstrated.

It will thus be seen that many who have made therapeutics, physiology, chemistry and pharmacy a special study; have utilized such acquirements in improving the pharmaceutical condition of important remedies which are relied upon by the whole medical profession in the treatment of disease; have made such study common property with the profession at large by constant printed communications embodying the complete physiological arguments involved and affording the physician an opportunity to carefully weigh their value, to adopt or reject the

*The first of this series of articles appeared in THE JOURNAL of April 21.

statements made, are engaged in a work worthy of the most appreciative consideration of the medical profession, and should be encouraged to the utmost by them.

As was before stated, such manufacturers have devoted themselves to the service of the medical profession; have given their entire time to this work for years; many of them have pursued strictly ethical means in introducing their specialties to physicians alone; have given the products introduced their correct pharmaceutical names; and have relied upon the use of their own names in connection with their preparations to induce physicians to prescribe the originators' products, as their sole protection against dishonest competition.

Failing to appreciate the character of the service rendered, or deceived into the belief that such preparations were no improvement over those made by any pharmacist or manufacturer, who, moved by cupidity and self-interest, and without the necessary knowledge to successfully imitate such specialties, has dispensed crude, imperfect substitutes in prescriptions, the physician has been largely imposed upon; the reward for important service in medicine has ben diverted from its rightful recipient as the manufacturer finds that he is, to a large extent, booming the sale of vile imitations of his perfected products, for the effects of which he is held accountable in many cases; results promised are not secured; patients suffer.

Under these conditions, whenever such a manufacturer originates anything new, he is compelled in self-defense to give it a trade-mark name. This is not an attitude opposed to the physician; in fact it is in his best interest, as it renders him able, by ordering by this trade name, to secure the particular manufacturer's product he desires, and largely prevents the fraud perpetrated by many dishonest pharmacists. Such products are usually fully described by those who place them on the market, the active ingredients and proportions of the same are carefully given, and the physician knows what he is prescribing. There is another class of preparations which do not appeal to the confidence of cultivated physicians; mere mixtures of well-known and often-prescribed medicines, which involve no advancement in any direction, but are placed upon the market for the sole purpose of making money, and have no *raison d'etre* for their existence; these could be as well compounded by any pharmacist. They are on the market and are also given trade names; the law protects them in this privilege, they are vested rights and can not be interfered with. The remedy here lies with the physician himself; he should not prescribe them.

It has been proposed that manufacturers should patent their preparations, publish a complete working formula for their preparation, and enjoy (?) the exclusive sale of such for the period allowed—17 years. Experience has taught me that the only protection against the ravages of piratical manufacturing houses, who make a living by stealing the products of the brains of others and seek to monopolize the returns due the original investigator for his labor and expense in introduction, lies in withholding the manipulations employed, and taking out a trade-mark name.

Trade names have been adopted by nearly every legitimate manufacturer in the country; they have been driven to it by the dishonest practices of others. They are responsible for their existence. They are the ones who seek to abolish them. They interfere with their dishonest practices and they naturally wish them done away with. Very truly, yours,

R. W. GARDNER.

To much of the foregoing hearty assent must be given. The conditions portrayed by Mr. Gardner are fairly in accord with other close and competent observers. Far from satisfactory, these conditions are shared by other branches of medicine in all that pertains to educational, professional and business relations. As has been pointed out time and again, it is the lack of thorough education and practical training in materia medica, chemistry and pharmacy, on the part of many medical graduates which is primarily responsible for their patronage of medicinal articles which are unworthy of support. This proposition is self-evident. The physician should be as competent to carefully discriminate in the selection of a remedy, or formulate a prescription for it, as he is to diagnose the disease. Lack of knowledge and practice in this respect places him at a disadvantage, weakens his self-reliance, impairs his usefulness. He will either fall into a "rut," believing it best to hold fast to that which has proved good, or cast about for every new-fangled remedy or combination that appears. In either event he is neither contributing to science nor doing his duty to his patrons.

But granted that all physicians had acquired a fairly comprehensive knowledge of materia medica and therapeutics, there yet remains the pharmacist. While there is a tendency to reversion to the older plan of the English apothecary in so far as physicians dispensing their own medicines, yet it is not believed that the separation of medicine from pharmacy, which has been going on so long, will continue.

The causes for this retrogression are well-known and need not be considered. But, especially engaged in the preparation, compounding and dispensing of medicine, the pharmacist should be regarded as indispensable and as such be entitled to a position in the great field of medicine. Unfortunately, the status of the pharmacist is not on the average any better than that of the physician on matters pertaining to pharmacy, so that it may be said that only a minority of either are qualified to fully perform their respective services, viz., prescribing and compounding and dispensing. It is for these reasons that existing conditions prevail and will continue as long as physicians will try anything and everything through their lack of information, or because they can not afford to trust pharmacists in preparation and compounding, owing to the unsatisfactory pharmaceutical education and training on the part of the latter.

The trade element in pharmacy is now rampant and is already bearing fruit, but there will be a better, more highly educated class of pharmacists who will deserve and will enjoy full medical confidence. In the meanwhile, there is need for patient and careful discrimination; unqualified condemnation will accomplish nothing. Every wholesale manufacturer naturally thinks that his article should have the preference. This is the case with Mr. Gardner. From an ethical standpoint, his manufactures deserve medical preference because they respond to ethical requirements. The preparations of hypophosphites are properly designated by pharmaceutic titles and his name is a guarantee of excellence. Probably every physician desiring to use hypophosphites knows of Gardner's and is far more likely to specify his make than if they were designated by some arbitrary fanciful title, such as for example: "Hyper-phos-ol," or "Phos-syr-ol," or some other hyperbolic combination or "verbicide."

It is not believed that the trade-names will afford protection against substitution, because any one who will substitute one brand of an article for another without the prescriber's consent, would not hesitate to indulge in the same practice with trade-name articles. On the other hand, it would alienate the favor and preference of many medical men who are opposed to trade-names on ethical and other grounds, not the least of which is the taxing of their memories with new and meaningless names. The multiplication of these coined names has been so great as to prove not only confusing but even dangerous to prescribers, owing to their often great similarity. Besides such names have especial fascination and charm for the cultivated laity who are constantly on the lookout for new remedies for self-medication and subsequent exploitation to their friends and relatives. Since Mr. Gardner has pursued the laudable course of addressing himself to the medical profession exclusively, he certainly would not favor such method.

The criticism concerning the exploitation of "mere mixtures" which have no "*raison d'etre*," but "to make money" for somebody and that "these could be well compounded by any pharmacist," is well taken. But here is where Mr. Gardner treads on dangerous ground. If he had been more explicit as to what are defined as "mere mixtures" he would have contributed greatly to the solution of this question. While the articles of his manufacture are official in the pharmacopeia and any qualified pharmacist should be able to make similar preparations, as has already been observed in these articles, their satisfactory preparation as a class involves certain conditions not always met by the average druggist. But would any other manufacturer agree that his articles were "mere mixtures" and had no "*raison d'etre*?" Certainly not.

It was contended in one of the earlier articles of this series that originality or invention was entitled to the protection that a patent affords, but such protection should not extend through trade-mark to the name of the article, but only to the proper name or symbolic devices. Our correspondent's opinion that the suppression of the manipulations and employment of trade-

names is the only protection is antagonistic to the basic principles of medicine and pharmacy, and contrary to the course pursued by him some years ago. When advocating that the most complete information be furnished pharmacists, he himself contributed a very elaborate and excellent collection of formulas with full working processes for these very preparations. This information entered into the pharmaceutical literature and some of the preparations were incorporated in the pharmacopeia. This was the ethical plan. It is still followed by some manufacturers; why should it not be by all? Upon it rests all progress. The leading reliable manufacturing pharmacists, as for instance, Squibb, Wyeth, Sharp & Dohme, Parke, Davis & Co., and others, do not resort to trade-mark, their own names being sufficient. Those who do are chiefly the promoters and outsiders, who, through the use of trade-names, seek to rob the legitimate manufacturers of their just returns. As to who are responsible for the attempt to abolish trade-names, the charge of esoteric motives is gratuitous. The two most representative bodies concerned, the AMERICAN MEDICAL ASSOCIATION and the American Pharmaceutical Association are committed to the principle.

It is believed that Mr. Gardner and all reputable manufacturing pharmacists appreciate these facts: 1. The physician is entitled to and demands the fullest information concerning the products he is asked to prescribe and use; 2, in order to insure their identity and that they may gain a place in medical literature, all medicinal preparations should be designated by pharmaceutically descriptive titles and not by mysterious names, accompanied by befogging literature; and, 3, the manufacturer who adopts the above two propositions and carries them out honestly and honorably will add prestige to his products, dignity and reputation to his name, which, on the label of a bottle, would be worth more than any copyrighted proprietary title.

Therapeutics.

Treatment of Croupous Pneumonia.

At the Eighteenth Congress for Internal Medicine, held recently at Wiesbaden, Pel, of Amsterdam (*Berliner Klinische Wochenschrift*, 1900, No. 18, p. 398), pointed out that in most cases of croupous pneumonia, Nature unaided is capable of effecting a cure through the compensatory powers of the body for neutralizing pathologic processes. The attacked organism possesses various protective influences through which it opposes the morbid process and neutralizes it toxic effects. The important part played by leucocytes and fibrin is indicated by the hyperleucocytosis, and the hyperfibrinosis of the blood, frequently present. Possibly, elevation of temperature is an adjuvant of these two factors. The fate of the pneumonic patient is thus determined, not alone by the conditions present in the lungs, but also by those in the fluids of the body. The constitution or the individuality of the patient, which determines the intensity of antitoxin-formation, as well as the strength of the protective agents, is of decisive importance. In cases of pneumonia that pursue a less favorable course, certain constitutional anomalies influence the abnormal irregular course. The danger to life is greater in patients with emphysema, bronchitis, nephritis, diabetes, in the aged and the reduced, in the neurotic, and especially in the alcoholic, when attacked by pneumonia, than in the healthy. Objective investigation has shown that there is no single remedy by means of which it is possible to shorten or to influence favorably the pneumonic process. The value of serumtherapy in this connection is as yet undecided. Some of the remedies proposed as specifics may, however, be employed for the relief of symptoms. Thus, venesection may be indicated in the presence of severe dyspnea, cyanosis and feeble pulse, and also of beginning pulmonary edema, and it may be of life-saving value. Digitalis in small doses may act as a cardiac tonic, but it is indicated only when pneumonia occurs in a patient with disease of the heart, and cardiac weakness appears, or cardiac insufficiency becomes a prominent feature. Large doses, however, are not to be recommended. The less the physician interferes in cases of pneumonia of regular course, the greater is the probability of sucessful termination. This does not, however, mean that the physician should do nothing. There yet remain the institution of an intelligent hygiene, of careful nursing, and of proper diet, and the mitigation of the most distressing symptoms, in order that the conditions of natural recovery may be rendered more favorable. Nothing should be considered too slight or too insignificant for consideration. For the distressing cough and embarrassed expectoration, the powder of ipecac and opium may be administered; for the severe pain in the side, if necessary, subcutaneous injection of small doses of morphin; and, later, for the embarrassed expectoration, an expectorant. Irregular and atypical cases require, on the whole, a stimulating course of treatment. In such cases there is danger from heart-failure. While premature and excessive stimulation may do harm, the opportune employment of such an agency may be the means of saving life. Alcohol occupies a place in this connection, exerting a stimulating and invigorating influence. Excess, however, is to be avoided, especially in the young. Camphor is the most reliable restorative, given at first in small doses, and, when the danger is great, in large doses, and especially subcutaneously in combination with ether. It may often be the means of saving life. Methodical sponging of the skin is agreeable to the patient, and exerts a favorable influence. The elevation of temperature does not require the use of antipyretics, and is unattended with danger. It is probable that the fever is a conservative and a useful reaction on the part of the infected organism. Prophylactic measures are, however, indicated. The constitution of the patient should, as far as possible, be preserved intact, in order that, should he be attacked by pneumonia, the natural protective influences may become operative in full vigor. The principal indication here is to avoid excesses and over-exertion in every direction, even during health.

Treatment of Tubercular Cystitis.

The *Clinica Moderna* gives the following:

In the first stage—viz., before surgical intervention is called for—it is requisite to combat the purulence of the urine and the pains. To that end one of the following formulæ may be used:

℞. Codein sulphatis ..... gr. ivss
Salol ..... gr. xc

M. divide into twenty powders. Sig. One powder to be taken after each meal.

Or:

℞. Cocain hydrochlorit
Ext. cannabis indicæ, āā ..... gr. ivss
Guaiacol carbonatis ..... gr. xc

M. ft. pl. No. xx. Sig. One pill to be taken after every meal.

Against fermentation of the urine urotropin may be given in 4½-gr. doses four times a day.

Lactic Acid in Gynecology.

Dalche has found lactic acid a natural antiseptic for the vaginal cavity. In 3 per cent. solution it destroys the bad odor and greenish-yellow color of leucorrhea and lessens the quantity of the discharge. It causes curative desquamation when applied in half-strength in endometritis and endocervitis. It causes no danger.

The author, after douching with lactic-acid solution 1:35, puts in tampons of 1:33 in glycerin every eight days, with daily hot-water douches in the interim.—*Merck's Archives.*

Bed Sores.

℞. Argenti nitratis ..... gr. xl
Aquæ dest. ..... fl℥ii

M. Sig. Paint red and tender spot daily.

Indications: To be employed over red and sore spots that threaten to break. Also employed if surface ulcerates.

℞. Hydrarg. perchlor ..... gr. ii
Spir. rect ..... fl℥i

M. Sig. Use locally.—*Erichsen.*

℞. Alumen
Sodii chloridi, āā ..... ℥ss
Aquæ
Alcoholis, āā ..... Oi

M. Sig. For local use, twice daily.—*Forbes: Dominion Med. Mon.*

Agalactia.

℞. Strychninæ sulphatis ..... gr. i
Pilocarpinæ hydrochloratis ..... gr. i
Saccharl lactis 3iss
Alcohol, q. s.

M. et ft. tabellæ triturationes No. lx. Sig. One tablet every four hours.

Indications: The various malt extracts, with or without cod-liver oil, are available adjuvants. Massage of the breasts is also recommended.

℞. Ext. ergotæ
Ext. nucis vomicæ, āā ..... gr. vi
Quininæ hydrochloratis ..... gr. xxiv

M. et ft. pl. No. xxiv. Sig. One pill every six hours.

Indication: Use in anemic subjects.

℞. Ext. pilocarpi fl. ..... fl℥ii

M. Sig. Teaspoonful two or three times a day.—*Bartholow: Dominion Med. Mon.*

Spermatorrhea.

In spermatorrhea and anaphrodisia of neurasthenia, Bozzolo and Mangianti advise:

℞. Cornutin citratis ..... gr. ss
Cretæ preparatæ ..... gr. xlv
Gum arabic ..... gr. xxxiss

M. ft pil. No. xx. Sig. From two to four pills to be taken daily.—*La Medicine Mod.*

Bleeding Gums.

After the extraction of teeth, Vian recommends the following as an efficient styptic to check the bleeding:

℞. Chloroformi 3i
Acidi tannici
Menthol, āā 3ss
Tinct. krameriæ 3i
Aquæ dest., q. s. ad ..... Oi

—*Louisville Med. Mon.*

Erysipelas.

℞. Acidi carbolici
Tinct. iodin
Spiriti rect., āā ..... ℥iii
Ol. turpentini 3x
Glycerini ..... ℥iii

M. The site of the disease is to be painted with this mixture every two hours and then covered with antiseptic gauze.

℞. Ichthyol 3x
Petrolatum ..... ʒviii
Lanolin 3xv

M. To be applied locally.—*Louisville Med. Mon.*

Alopecia.

℞. Resorcini 3ii
Acidi salicylici ..... gr. xxx
Olei ricini fl3i
Spirits rectified fl3vi
Olei bergamot fl3i

M. Rub well into the scalp every night.

When greater stimulation is desired, use:

℞. Mercuric chlorid ..... gr. xii
Betanaphthol ..... gr. xl
Castor-oil fl3ii
Spirits rectified
Bay rum, āā ..... fl℥iii

—*Schamberg: Polyclinic.*

Warts.

Louvel-Dulongpre (*Med. Neuigkeiten*) advocates the following painless treatment, which also has the advantage of leaving no cicatrix. A concentrated solution of potassium bichromate in boiling water is prepared by gradually adding to the latter enough of salt to make a saturated solution. On cooling, a certain quantity of the salt will again be precipitated. The supernatant fluid is to be applied once a day by means of a brush.

Cardiac Stimulation for a Child.

℞. Spir. etheris comp. ..... m. lxxx
Tinct. nucis vomicæ ..... m. xl
Tinct. lavandulæ comp. ..... m. lxxx
Aquæ cari, q. s. ad ..... ℥iv

M. Sig. One tablespoonful every four hours to a child of 8 to 12 years.—*Ashby: Med. Record*

Asthma.

℞. Ext. euphorbiæ piluliferæ fl. ..... fl℥i

M. Sig. Thirty to sixty drops, as required. —*Payne.*

℞. Pulv. stramonii fol.
Pulv. belladonnæ fol., āā ..... ℥i
Pulv. potass. nit. 3iss
Pulv opii ..... gr. xv

M. Sig. Burn a little and inhale the fumes.

℞. Potass. iodid. 3viss
Tinct. lobeliæ fl3viiss
Aquæ dest. fl3xvss

M. Sig. From a teaspoonful to a tablespoonful in a glass of beer before meals—*Dujardin-Beaumetz: Dominion Med. Mon.*

Bites of Insects, Etc.

℞. Liq. ammon.
Collodii, āā ..... gtt. xc
Acid. salicyl. ..... gr. iii

M. Sig. Apply a drop upon each bite.

℞. Naphthalin
Vaselin, āā q. s. ad saturated.

M. Sig. Rub in a few drops every four hours.—*Louisville Med. Mon.*

Sodium Benzoate in La Grippe.

According to the *Medical News*, no drug has given more favorable results in the treatment of la grippe than benzoate of soda. It may be given in capsule or powder form, the usual dose being ten grains three or four times a day. When muscular symptoms are pronounced the following combination acts admirably:

℞. Sodii benzoatis 3ii
Salol 3i
Phenacetin ..... gr. xxxvi

M. et ft. chart No. xii. Sig. One powder every four hours.

Belladonna in Bronchopneumonia.

A. H. Frere says that the great value of belladonna in asthma and whooping-cough is well recognized and when we come to consider the main actions of this drug on the nervous and vascular systems, we find there are many reasons why belladonna should prove of value in bronchopneumonia. As an antispasmodic; as a stimulant to the cardiac muscles; as a stimulant to the vasomotor and respiratory centers; and lastly, as diminishing secretion, it must tend to relax the tubes, to obviate the stasis of the vessels around the bronchi, and facilitate the breathing. He says that he has been accustomed to employ iron in these cases with great benefit, having regard to the fact that this remedy increases the number of blood-corpuscles and the oxygen-carrying power of the same.—*Merck's Archives.*

Abortion (To Prevent).

℞. Tinct. opii deodorati fl3ii
Chloralis 3ii
Ext. hyoscyami fl. fl3i
Syr. acaciæ fl3iv
Ext. viburni prunifolii, q. s. ad ..... fl℥iii

M. Sig. One or two teaspoonfuls every hour or two until moderate somnolence.

Indications: In threatened abortion, give in sufficient doses to secure the continuous moderate effects of opium and chloral. Complete rest in bed, light diet, and daily moderate evacuation of bowel.

℞. Ext. opii
Ext. hyoscyami alcoholici, āā ..... gr. iii
Ol. theobromatis, q. s.

M. et ft. suppositoria No. vi. Sig. One by bowel as required.

Indications: In threatened abortion employ every hour or two until somnolence. Bowels to be moved daily by mild laxative of cascara or saline or by an enema.

℞. Hydrargyri iodid. avi ..... gr. x
Saechari lactis, q. s.

M. et ft. tabellæ No. xl. Sig. One after meals.

Indications: In habitual abortion due to syphilis, increase dose until slight soreness of gums or tendency to diarrhea, then reduce to tonic dose. Continue during pregnancy.—*Dominion Med. Mon.*

Infantile Constipation.

Dr. L. Emmett Holt has said that the conditions found in young children were such as to make the treatment of constipation in these little patients proportionately easy and satisfactory. He always insisted on a careful scrutiny of the whole of the child's daily life. The nurse was often to blame for the constipation in the infant. In infants under six months of age constipation was often due to the use of modified milk in too small percentages, so that too little residue was left. Under such circumstances the indication was to increase the total solids. The bad cases of chronic constipation in children of 5 or 6 years of age that he had seen had been almost without exception in children who were exceedingly healthy and robust. He could heartily recommend cascara as being probably the most valuable drug in the treatment of cases in which there was loss of expulsive power. Still better than drugs, in his opinion, were suppositories.—*Medical Record.*

Vaginismus.

Dr. Touvenaint (*New Yorker Med. Monatschrift*) advises the following:

R. Stront. bromid.
Potass. bromid.
Ammon. bromid., āā.....℥1¼
Aquæ dest.....℥8
M. Sig. Tablespoonful twice a day.

Or:

R. Zinci valerianat.....gr. 5/6
Quinin. valerianat.....gr. 1½
Ext. opii.
Ext. belladonnæ, āā.....gr. 1/6
M. Ft pil. No. 1. Sig. From 3 to 6 pills daily.

Locally:

R. Ext. krameriæ.....gr. 1½
Morphin. hydrochlor.....gr. 1/3
Ol. theobrom.....3i
Ft. suppositoria vaginal.

Or:

R. Cocain hydrochlor.....gr. 3
Ext. belladonnæ.....gr. 1½
Strontii bromid.....gr. 4
Ol. theobrom.....℥1¼
M. Ft. suppos. vaginal.—*Ex.*

Salol and Cocain in Burns.

Dr. Capitan (*Cronica Medica*) asserts that the following ointment suppresses pain and suppuration in burns and promotes healing:

R. Salol.....gr. 120
Cocain hydrochlorid.....gr. 7½
Vaselin.....gr. 900

Dr. Capitan uses in addition compresses moistened with solutions of corrosive sublimate in water of .25 to .5 per cent. strength, or of borated water, 1:50.

Medicolegal.

Separation Agreements on Account of Health.—While much controversy has arisen as to the validity of separation agreements, and although judges have frequently and in strong language deprecated the cause and effect of them, and condemned agreements by which they were accomplished, nevertheless, the Supreme Court of Kansas declares, in King vs. Molohan, that it may be regarded as settled law in England and this country that a valid agreement may be made for an immediate separation between husband and wife, where the conduct of one is such as to render a separation necessary for the health and happiness of the other, or when their relations are such as to make separation inevitable.

Cognizance Taken of Mortality Tables.—The Appellate Court of Indiana states, in Chicago, Indianapolis & Louisville Railway Company vs. Neff, that the court will take judicial knowledge of the United States mortality tables, and of other standard tables of the same character., It also says that where a witness has shown his competency to testify as to the expectancy of a life the proper course is to ask him to state the expectancy and let him refer to the tables in order to refresh his memory, and not to ask him what is the expectancy of the life as shown by the tables.

What Constitutes "Sound Health."—The Supreme Court of Ohio holds, in Metropolitan Life Insurance Company vs. Howle, that, in life insurance, "sound health" means that state of health which is free from any disease or ailment that seriously affects the general healthfulness of the system, not a mere indisposition. And it pronounces unobjectionable the following charge to the jury: "Sound health," as used with reference to life insurance, means that state of health, free from any disease or ailment, that affects the general soundness and healthfulness of the system seriously, and not a mere indisposition, which does not tend to weaken or undermine the constitution of the assured. The word "serious" is not generally used to signify a dangerous condition, but rather a grave or a weighty trouble.

Fright from Witnessing Another's Peril.—The Appellate Court of Indiana thinks it remarkable that no precedent was cited to it, and that it was itself unable to find any, of an action having been successfully maintained similar to the case before it of the Cleveland, Cincinnati, Chicago & St. Louis Railway Company vs. Stewart wherein the latter-named party sought, and recovered a judgment for, damages for "nervous prostration" caused by fright from seeing her daughter in peril attributed to the negligence of the railway company. In other words, it says that it was not cited, by the learned counsel engaged, to any case, nor has it been able, after the most diligent research, to find any case, holding that fright occasioned by imminent danger to one person can be made the basis of an action for damages by another. And, in the face of the authorities, it declares that it is not willing to establish such a precedent by an affirmance of the judgment to that effect in this case. Witnessing an injury or a threatened injury to another, even though it causes fright, the court goes on to say, is not in itself an injury to the person witnessing it. There must be some direct physical connection between the cause and effect. Hence, the fact that one is frightened by observing another in danger, and that such fright brings on nervous prostration, gives no cause for action to the former. Nervous prostration, it also considers, is largely a mental, and not a physical, condition.

Board of Health as Part of City Government.—The Board of Health for the City of New Orleans owes its origin to the provision in the act of 1898 making it incumbent upon the council or legislative body of each and every incorporated municipal corporation of the state to establish and organize a town or city board of health. It is a part of the city government, the Supreme Court of Louisiana holds, in State, on relation of the board, vs. Common Council. It has not had conferred upon it, by the general assembly, an unrestricted power, for example, of determining how much money should be appropriated for its purposes by the common council in any given year. Of course, having been entrusted with the special and important duty of guarding the public health, it can not but keenly appreciate a situation which might leave it crippled in its action. But, the court insists, there is no more ground for independent action on its part in determining the amount of money it shall have to expend, than there would be for the police, or any other department of the city government. The intention of the general assembly was that the board of health and the council should act together for the attainment of any object in which they have a common interest. The city is not unlimited in its power to raise funds; there are other important objects besides the preservation of the public health to be attained, and, where the constitution has ordained, the citizen has but to obey, and to discharge his duty as best he may, with the limited instrumentalities placed in his hands. So, the court holds, if the appropriation for the board of health be too small it will have to diminish its force and curtail its expenses. The court has no right to assume that the common council is any less solicitous for the health of the city than the board itself, and it has

no authority to order the council to enlarge the amount placed by it on its budget for the prospective expenditures of the city board of health.

Legal Compensation for Suffering and Death.—According to the Supreme Court of Arkansas, in assessing damages for wrongs causing death, the law does not undertake to find a sum equal to the value of life to the deceased or for which the person killed would have voluntarily suffered death. That would be impracticable; for to most persons life is a priceless gift, which would not be surrendered for the value of an entire railroad paid to their estate. Nor, in allowing a recovery for pain and suffering, does it aim to fix a sum that would lead one willingly to endure such pain; for few would consent to have a leg crushed off, and bear the loss, for many times the sums allowed. The injury being irreparable and already suffered, the jury, after hearing the evidence, are allowed to assess a sum which, in their judgment, they deem a reasonable compensation; having regard for the severity and duration of the pain and suffering. They are given great latitude in such cases, for courts do not undertake to measure pain and suffering; but their judgment is not altogether uncontrolled, and, when such questions are brought before the judge on motion for new trial, in determining whether the proper bounds have been exceeded, he must, to a large extent, be governed by the practice of courts in such cases as shown in the decisions. Now, all of these decisions, so far as the court knows, hold that in cases of instantaneous death, nothing can be recovered for pain and suffering. And the same rule, it says, is applied when, though life remains a few moments, unconsciousness instantly follows the injury; for in such a case no conscious suffering is shown. The burden of proof is on the plaintiff to show that the deceased, as a result of the injury, underwent conscious pain and suffering. And an administrator can recover only such an amount as the deceased might have recovered had he been miraculously restored to life and health at the moment of his death. In view of all of which, the court holds, in the case of the St. Louis, Iron Mountain & Southern Railway Company vs. Dawson, that where a child between 6 and 7 years of age was run over and so injured that she died in a moment or so, even if the evidence justified more than nominal damages, an award of $4000 to her administrator for her pain and suffering must be considered excessive.

Night Medical Service.—The charter of the new City of New York provides for what is called the night medical service. Any physician may apply to the police captain of the police precinct in which he has his office to be registered as a physician to be called upon by the police to do such medical service; and upon the Registrar of Vital Statistics certifying that he is in good and regular standing in his profession he shall be so registered. On the application of any person residing within such precinct for medical attendance between 10 o'clock at night and 7 o'clock the next morning, the police officer in charge at the precinct station-house must detail an officer to call upon a physician so registered and conduct him to the residence of the patient. After the medical service is performed, the accompanying officer has to give a certificate to that effect to the physician, stating the name and address of the patient, and that the physician is entitled to $3 for such service. Such physician must then request payment thereof of the patient, and in default of such payment the captain of the precinct has to indorse such certificate; "and thus indorsed it shall be the duty of the cashier of the department of health to pay at sight the fee aforesaid." And the charter is mandatory that the Board of Estimate and Apportionment and the municipal assembly shall make an appropriation for such purpose each year, and put it in the tax levy; the sum not to exceed $3000, unless otherwise provided by said board and the municipal assembly. But notwithstanding this, it was made a defense, in the case of Dixon vs. the City of New York, that when the night medical services which it was here sought to recover for under these provisions were rendered, there was no money appropriated to pay for such night medical service. This defense, however, Mr. Justice Gaynor would not accept. He holds, at a trial term of the Supreme Court of New York, that the appropriation for this service is one which said board and municipal assembly are required to make, and that they can not, by failing to make it, prevent the purposes of these provisions of the city charter from being carried out, and can not prevent such expenses being incurred, any more than they can in a similar way prevent the mayor and corporation counsel from collecting their salaries. They are empowered to fix a limit which the expense of the night medical service shall not exceed. This they may do in good faith, but they may not refuse to make an appropriation for it. And the plaintiff, it is held, had a right to presume that they had obeyed the mandate of the statute, and was entitled to a judgment.

Privilege in Case of Infant Patients.—Infants and others laboring under a disability, the appellate term of the Supreme Court of New York holds, in Corey vs. Bolton, are covered by the word "patient," where a physician or surgeon is prohibited by statute from disclosing any information which he has acquired in attending a patient, unless there be an express waiver upon the trial or examination by the patient. Such a statute, it maintains, should have a broad and liberal construction, to carry out its policy, and, so construed, would cover all patients, regardless of their legal status. Certainly one who has been a patient prior to a disability does not become any the less a patient because of the disability. This much being settled, the court takes up the question of waiver in the case of an infant patient. A construction that the waiver can not be made by persons under a disability, it says would suggest that the statute was rather for the protection of those opposed to these persons, than in their favor. Consequently, it does not put that construction upon it. It holds, as the reasonable construction to be put upon the law, and it is not only, as before stated, includes in the word "patient" all persons, regardless of disability, but, besides giving them the privilege of the privacy, gives them the right to waive it. But how, for example, can an infant waive the privilege? A waiver is an intentional relinquishment of a known right, and must be by one capable of binding himself, and so can not be made by an infant personally, for he has a right to be protected against his own imprudence. It is not to be assumed, the court goes on to say, that the statute contemplated that persons under a disability should waive personally, annd therefore some representative must have been in the minds of the lawmakers as authorized to make the waiver. With respect to infant patients who are not parties to an action at the trial of which the waiver is sought to be made, the guardian of the person would seem to be the most appropriate person to make the waiver; for to this guardian are confided the rights which pertain to the person of the infant, and the right of waiver given by the statute has been held to be one which pertains to the person and character of the patient, and not such as belongs to a representative of property rights. The guardian should, however, never be permitted to make a waiver prejudicial to the interests of his ward; but it does not seem that it is necessary that it should affirmatively appear, upon a waiver by such a guardian, that the waiver is a benefit to the infant. The guardian may be permitted to exercise his own judgment with respect to the question of prejudice to the child, and unless called upon to do so, no showing need be made by him primarily in order to be able to make the waiver. Of course, the court says, the ward would not be so bound by a guardian's waiver that he could not at any later time assert his privilege, if it appeared that the waiver had been to his prejudice; and so, as to him, the rule that the privilege, if once waived, is waived forever, does not apply, under all circumstances. Nor has the court been able to discover any sufficient reason for confining an infant's right to waive to any particular action, or for holding that the infant's interest must be so involved that the waiver will be to his pecuniary advantage. It may be an infant's interest, it thinks, beyond any requirement for the privacy allowed by the statute, to waive, that the ends of justice be furthered. The parents being the natural guardians, and so the guardians of the person, the court holds, can make the waiver. Whether a guardian *ad litem*, or one appointed for the purposes of a suit, can, in a proper case, make the waiver, the court passes with the remark that it was not necessary in this case to determine.

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HEALTH AND SUMMER RESORTS.

So many people now leave city homes for a summer sojourn in the country that the question of health during the change of residence has become very important. At most of the summering places public spirit and the feeling that it is a paying investment lead to the taking of sanitary precautions that will insure as far as possible the health of summer visitors. Each year sees such an addition to the number of those who leave town during the hot months, that the enforcement of sanitary regulations may not keep pace with the increasing crowd of visitors. The present summer, coming as it does in the midst of a period of almost unexampled prosperity, is apt to test the capacity of most summer resorts to its utmost. When the number of visitors exceeds expectations, ordinary sanitary precautions prove unavailing. In Germany stringent legal regulations give more or less assurance of the enforcement of thorough sanitary measures. In default of regulation in America, physicians are called upon to know the details of the sanitation of places to which families under their care go.

The most important matter is the water-supply. The best practical index of its wholesomeness is the number of cases of typhoid that have occurred in a town during the spring and preceding fall. This is, as a rule, easy to ascertain. No typhoid means pure water. There is one exception to the rule. If there has been an undue proportion of gastro-intestinal affections, and especially if these have been dysenteric in character, the non-occurrence of typhoid may mean only the absence of specific infectious material. Water may be contaminated by sewage, but there being no typhoid in the neighborhood, cases of the disease are not produced. The importance of a single case will almost surely lead to an epidemic.

Next to the water-supply in its sanitary importance comes the milk-supply. As milk forms such a large part of the diet of children it can scarcely be considered second in import even to water. Children especially are sent to the country for the summer, and their lack of resistive vitality during the developmental period renders them especially liable to infections. It is a common fallacy that away from cities milk must be fresh and good. As a matter of fact the precautions taken to preserve city milk often assure a much better article than is obtained by those living in the country. Ice is a most important factor in the preservation of milk. It inhibits micro-organismal development. It is used liberally for city milk and, even though the milk is distributed from twelve to fifteen hours after milking, it contains very few more bacteria than it did originally. In the country the use of ice is more neglected. It is important then to know the source of the milk that is used, and to be assured of its careful preservation on ice until the time not only of its distribution but of its consumption.

There are other dangers, but of secondary importance. Of late years botulism—poisoning by spoiled meat—has come to occupy a much larger place in medicine than heretofore. Its symptoms are due to the presence of one or more specific microbes, which have recently been isolated and studied. They occur in sufficient numbers to be virulent, especially in canned meats that have been left open for some time before being consumed. The bacillus botulinus, as it is called, multiplies very rapidly in albuminous substances that have been kept from contact with oxygen for some time and then are freely exposed to the air. In our time the use of preserved meats has become so general during the summer that a word of warning in this matter is important.

"WHAT KNOWLEDGE IS OF MOST WORTH?"

In an article entitled "A Consideration of Herbert Spencer's Essay on Education," David Starr Jordan,[1] president of Leland Stanford University, points out that Spencer placed first on the list in importance among the leading kinds of activity constituting human life, "those activities which directly minister to self-preservation," and next in order those that indirectly operate toward the same end. Probably no one will deny the paramount importance of perfect physical and mental health. Ill health, whatever its cause, "deducts more from complete living than anything else," and shortens by at least one-half the possible duration of life. Hence Spencer concludes "that, as vigorous health and its accompanying high spirits are larger elements of happiness than any other thing whatsoever, the teaching how to maintain them is a teaching that should yield in moment to no other whatever." And Jordan goes on to point out that it is not merely hygienic rules that should be inculcated, but such a knowledge of physiology that the student may formulate "his own rules of health for himself." This does not mean, however, "every man his own physician," but that every educated person should have sufficient scientific knowledge to be able to tell a scientific physician from a quack. No physician but will assent to the statement that "because of the fundamental value to the individual, hygiene, with the laws and facts of physiology and biology, should have a leading part in any well-ordered scheme of education."

It is a healthy sign of the times to find that prominent educators place a true knowledge of the laws of health first in their answer to the question—"What knowledge is of most worth?" But how many of our academies, colleges, and universities are fully prepared to give their students the knowledge that is worth most? Probably not many would be able to met the requirements that scientifically-educated physicians might wish to exact.

1. The Cosmopolitan. June. 1900.

In fact, perhaps as yet not a single course of studies has been arranged with the object of meeting requirements of this character as the primary object in view. And yet our educational institutions of to-day are far better prepared to meet criticisms along these lines than those in England were when Spencer startled the educational world with his question, "What knowledge is of most worth?"

The field is a large one, and at this time and in this place it may be sufficient to indicate that the prominence given to natural sciences in our better schools, and to physical culture, makes for common-sense as regards matters of health. It is not so much sciences as wisdom that is necesary in order to understand and to obey the laws of physical well-being, and the day is still distant when there shall be "no medical fraud so shameless that educated men will not give it their certificate."

CHRONIC, HYPERPLASTIC TUBERCULOSIS OF CECUM.

There occurs a form of localized, circumscribed tuberculosis of the bowel that may be successfully treated by operation. This is the hyperplastic form of tuberculosis, the counterpart of which is seen also in other tissues, such as the skin, larynx and lymphatic glands. The thickening of the intestine may be so marked as to produce a swelling grossly a carcinoma. As pointed out by Crowder[1] in his study of two cases of this affection, in one of which a carcinoma of the cecum coexisted, this form of intestinal tuberculosis is most frequent in the region of the cecum. Its history in pathology is brief, having been first described in 1890 by Durante; since then the subject has been discussed extensively by German and French surgeons, but no general summary of the knowledge of the condition appeared in the English language before Crowder took it up and gave it a thorough consideration. Indeed, the text-books just now are beginning merely to mention it. This is the reason we call especial attention to this form of intestinal tuberculosis.

The first case recorded by Crowder occurred in a colored girl of 14; a tumor of the cecum was removed by resection; end-to-end anastomosis was practiced, and recovery ensued. The patient gave a history of recurring cramp-like pains in the abdomen for about eight months; after a time transitory swellings appeared, and a mass as large as a lemon was felt in the cecal region. There was no evidence of any tuberculosis elsewhere in the body.

The second case occurred in a woman of 54; here there was no operation, and the hyperplastic cecal tuberculosis was associated with carcinoma, springing from the margin of an old tuberculous ulcer. There was an inguinal fistula of long standing. Crowder found but one previous instance of this association in the cecum, the case of Salzer from Billroth's clinic. In Crowder's second case there was a chronic tuberculosis of the lungs.

The great inelastic thickening of the cecal wall observed in these two cases, as well as in others in general, is due to overgrowth of the fibrous and muscular structures and to the formation of a non-degenerated, persistent tuberculous granulation tissue in the submucous coat especially. There is almost always stricture at or near the ileocecal valve. Constrictions also occur in the ileum due to similar conditions. In addition to ulceration, the mucous membrane presents quite constant and characteristic papillomatous outgrowths of varying size and form. Tuberculosis of the retrocecal glands is frequent. Tuberculous peritonitis rarely develops. As stated, the tuberculous tissue in the cecum has but little tendency to disintegration.

Of 84 patients, 40 were male, 44 female; the majority were between 20 and 40 years of age. As regards the genesis of this interesting form of tuberculosis, it is noteworthy that there is frequently found in these cases a latent, active or inactive pulmonary tuberculosis. In destructive tuberculosis of the intestine, on the other hand, there is commonly destructive, extensive involvement of the lungs. This indicates that intestinal tuberculosis, almost without exception secondary, takes now a destructive form, now a hyperplastic and chronic form, according as the general resistance of the organism varies. At the same time the character and the number of bacilli present undoubtedly also have something to do with determining the nature of the lesions.

In conclusion, it is to be noted that the hyperplastic, localized tuberculosis, referred to in the foregoing, hereafter must be considered carefully in the differential diagnosis of intestinal new growths and that it is a form of intestinal tuberculosis amenable to surgical treatment, as shown in the first case described by Crowder and in the cases recorded by Lennander and Krogius.[2]

1. Am. Jour. of Med. Sci., 1900, cxix, 668.

MONOGAMY AND LONGEVITY.

An English physician, Dr. Harry Campbell (*The Lancet*, June 9), insists on the importance of cultivating a high racial standard to prevent racial deterioration and claims that this can not be done alone by sanitation and prevention of disease. There must be also a vigorous weeding out of the unfit if we are to insure a healthy race, and ignoring of this fact is one of the most grievous fallacies. The elimination of the unfit in the natural way acts beneficially by limiting their production of offspring repeating their own defects. He lays it down as an axiom that all non-accidental deaths occurring before the close of the reproductive period are, racially considered, deaths of the unfit, therefore, in a racial point of view, beneficial. This effect is greatest when death occurs before the procreative period, and ceases altogether when it takes place after its close. He also assumes that it is in the order of nature for all organisms to die soon after the ces-

2. THE JOURNAL, xxxv, 1010.

sation of their reproductive activity and that this is true of men applying these ideas to the question of human longevity. Dr. Campbell argues that the procreative period of the male of our species is certainly prolonged beyond the Psalmist's three score years and ten, and that we owe to this the ability of any of us to exceed that limit in our lives. "Had no man," he says, "during the last 100,000 years got offspring after the age of 50, we should all probaby tend to die of old age about this time."

Children of aged fathers, he claims, are the saving leaven of the race, as regards longevity; the mother's reproductive period being limited as to time, she can cut no figure in the question, according to his views. In civilized communities, however, the tendency for the vigorous long-lived man to leave more children than the less robust is restricted—he has children generally by but one wife and she nearly his own age. Monogamy thus reduces him in this regard to the level of the inferior man and "robs the race of a number of individuals whose birth would diminish the racial tendency to disease in the later years and increase the racial span of life." This, he contends, increases the liability to certain diseases, especially those of advanced life, such as cancer, since the contribution to the species of the short-lived cancerous individual may be as great as that of his more physically favored brothers. The injurious influence of monogamy can not, however, be counteracted by discarding it, since that is a sociologic impossibility, as Dr. Campbell admits. He sees no remedy except in voluntary abstinence from marriage on the part of the unfit, and goes so far as to suggest that by judicious discrimination in this respect we may not only reduce the tendency to disease, but may even extend the span of life almost indefinitely.

There is no doubt that judicious regulation, not to say restriction, of marriage could improve the race, but there are some things in Dr. Campbell's theories that will hardly bear criticism. He apparently ignores the very great probability that the children of long-lived fathers begotten in their most vigorous maturity are likely to be better fitted to produce a healthy and long-lived posterity than those born in their decadence or old age. The only justification of his line of argument is that, by begetting children up to an advanced stage of life, they might furnish a larger quantity of descendants without regard to quality, which last is not supposed to have improved by the advanced age of the father or the great inequality of age in the parents. Polygamy is therefore not so certainly favorable to racial improvement as he appears to think; in fact, it might be distinctly unfavorable. According to his view, moreover, with the tendency to die at the close of the reproductive period, man ought to be much longer lived than woman, which is not the case. His paper is a suggestive one, but, like many others by some of the medical Weissmanites and Neo-Darwinians, it fails in a full appreciation of all the facts involved in the problem it treats.

MISMANAGEMENT IN THE BOER WAR.

Our English cousins are evidently passing through the same experiences that we had in regard to hospital management, or mismanagement, in the field. All kinds of charges and counter-charges are being made, some of which border on the sensational. The army medical department is receiving considerable censure, although most of it is directed against the government for its lack of appreciation of the necessities of the case and of the demands that would be made on the medical services by a large army fighting under such circumstances. When all has been said and cool judgment takes the place of hystericism, it will probably be found that no one is to blame, but that the trouble results from the fact that in time of peace there is little preparation made for war, as far as the medical department of the army is concerned. This experience may teach a lesson, and as a result the medical department in all countries will be more liberally treated in the future, but this is doubtful. The navy in all its departments is always ready for war. When the army is placed on a similar footing, then and not till then, will the basis for complaints of mismanagement cease to exist.

CONSUMPTION IN COLORADO.

The Colorado State Medical Society has appointed a committee or board consisting of the Secretary of the State Board of Health and the chief health officers of Denver, Colorado Springs and Pueblo, to investigate tuberculosis in that state. They are to make a thorough study of all the local problems of the disease and especially the question of its primary origination in the state, concerning which there appears to be much anxious difference of opinion. The report of their studies is to be given, as far as it can be made complete, at the next annual meeting of the society. There is reason to hope that the results of this investigation will have a very decided value and that they will relieve some of the apprehensions that now exist as to the dangers of the immigration of tuberculosis patients into Colorado. It is, of course, not to be expected that they will find that no cases of consumption originate in Colorado—it would be very remarkable if some did not—but the investigation, if thoroughly carried out, can not fail to deduce facts of interest and we trust will help to allay some of the excesive fear of contagion that may exist there as elsewhere in health resorts for consumptives.

ALCOHOLIC STIMULANTS NOT A NECESSITY.

Dr. Charles E. Woodruff, of the U. S. Army, in a communication in a lay journal, the *Detroit Tribune*, discusses the use of alcoholic stimulants, and claims that in certain states of exhaustion they are valuable. But he goes further than this and maintains that in some climatic and social conditions they are also essential. Thus he says, "As we go south, more of the normal people feel the need of stimulation to counteract the effects of the heat, until we reach lands where every one drinks moderately," and in another place he says that in the unnatural conditions of modern city life they are also needed and that "the liquor traffic is a necessity of modern deadly city life." His claim elsewhere made that alcohol is beneficial to soldiers in the tropics is discussed and re-

futed from military statistics in a late (June 21) issue of the *Boston Medical and Surgical Journal* and hardly needs further notice, but a word at least can be given as to the other unguarded statement above quoted. The liquor traffic may perhaps be called an essential element in modern deadly city life, without which it would be far less deadly, but the doctor will be quoted far and wide as proclaiming it a sanitary necessity, especially by liquor dealers. His previous utterances as regards the need of liquor in the tropics have attracted considerable attention by the lay press. These later ones will probably attract more, and put him in a position before the public of advocating views which are more and more being actively repudiated by the medical profession, which he certainly can not desire.

THE TOXIN OF THE GONOCOCCUS.

In view of the prevalence of gonorrhea and of the obstinacy of this disease to treatment, all new facts in regard to the biology of its microbe must be of interest. De Christmas and others have demonstrated that the gonococcus elaborates toxic substances capable of producing suppuration and fever in animals, and a purulent urethritis in man. The latter is characterized by abundant pus formation and heals spontaneously in a few days. The toxic substance or substances are found partly in the bodies of the cocci, partly dissolved in the liquid of the culture medium. De Christmas states that animals may be immunized against the toxin by the inoculation of successively increasing doses thereof. These observations have been questioned by other writers who found the gonococcus more or less feeble in its power to produce toxin. Evidently the composition of the medium upon which it is grown plays an important rôle in the elaboration of toxin. Recently De Christmas, seeking some good method for making the effects of the toxin evident, studied the results of the intracerebral injections of gonotoxin. The resulting symptoms were so definite that he selected this method for studying various problems in the biology of the gonococcus—problems that present great difficulties of solution because of the well-known cultural peculiarities of this microbe. The injection of filtered cultures into the brain of guinea-pigs is followed by spastic and paralytic phenomena ending in great dyspnea and death about sixteen hours afterward. De Christmas reports a number of interesting observations based on more elaborate and diversified experiments of this nature. He finds that the toxin is present in solution in the culture medium (ascitic fluid 1 part, bouillon, with 1 per cent. peptone 2 parts); that it does not concern a diffusion of toxin from dead cocci, but an actual biologic function which is not exercised except under certain favorable conditions. The toxin is not dialyzable, and it resists heating to 60 C. for at least one hour, but it is changed by exposure to 75 C. for fifteen minutes. Subcutaneous injection of the toxin results in the formation of an antitoxic substance in the blood of the animals used. This antitoxin neutralizes the gonotoxin outside of the body, and when injected into the brain before the toxin is injected, or into the circulating blood, it suspends the toxic action of the toxin. If verified, these results may become the starting-point of further investigations that may bear fruit in the treatment of gonorrhea.

PHYSICIAN'S RIGHT TO REFUSE CALLS.

The lay press in Great Britain and in this country has been recently handling the old theme whether a physician has the right to refuse to answer calls. A London coroner's jury, it seems, denounced as inhuman the action of some doctors in refusing to attend a case, and the papers followed its lead. A prominent American journal admits the legal right of the physician to refuse his services, but says that more is expected from him than from the ordinary tradesman, and that we look for some spirit of self-sacrifice from the medical profession. The doctor, according to popular notions, must give his services wherever wanted and at all times, without regard to his own personal comfort or welfare, and his refusal is counted as inhumanity. This is a satisfying sort of self-righteousness, easily assumed, that disposes of other people's rights so freely. A physician has as good a right to refuse to answer a call for his services as has a mechanic or a lawyer, and if he has good reasons, such as fatigue or overwork, no just charge of inhumanity can be made against him. He has also as good a right to refuse to work for nothing as any other man, and it would be better for the profession collectively if he oftener availed himself of this right. There is no profession that does as much for charity as the medical, and this is true to such an extent that a large section of the public has come to regard what is thus done for them as in the natural order of things and deserving of no acknowledgement. No one wishes to see any moral deterioration or increase of commercialism in the profession, and, indeed, there is no danger of its members as a class repudiating the honorable traditions from the past, but there is no need, on the other hand, that they should acquiesce in the unjust assumptions of pseudo-philanthropic posers, to lay down their rules of conduct and morals for them. That London jury was very probably made up of men who would, in their way of business, do far worse than the doctors whom, in their vicarious conscientiousness, they condemned, without scruple or remorse. As physicians we wish to exercise charity for all, even the offensively self-righteous, but the common cheap virtue of this kind in the daily press sometimes makes us tired.

DELAYED SUPPURATION DUE TO TYPHOID BACILLUS.

For a long time a discussion was waged as to whether or not the typhoid bacillus is a pyogenic organism; but the evidence would seem to have decided the question in the affirmative, the bacillus being found in pure culture in various suppurative processes. Sometimes such lesions have become manifest only many years after the primary infection. In one instance, the bacillus was found in a case of suppurative cholecystitis more than eighteen years after the original disease; in another, in a case of axillary abscess, seven years afterward; in a third, in a case of osteomyelitis, six years afterward; and in a fourth, in a case of abscess of the tibia, four years afterward. To these a further case is added by Bush and Symes[1] in which an abscess of the tibia per-

1. Practitioner, April, 1900, p. 413.

sisted for seven years after an attack of typhoid fever. The patient was a woman, 25 years old, in whom, during convalescence from an attack of typhoid fever at the age of 18 years, a painful swelling appeared in the upper and anterior portion of the left tibia, which was incised, with the discharge of a quantity of pus. The wound was completely healed at the end of three weeks, but almost immediately a second collection of pus accumulated and it was discharged spontaneously. From time to time, there was a discharge from this wound, until within two years. When the patient came under observation, she presented a doubtful swelling over the front of the upper third of the left tibia at the site of an old scar, with much tenderness in the neighborhood. An incision was made over the scar, and pieces of bone were gouged away until the center of the bone was reached. A small bead of pus then appeared, and on the removal of more bone, an abscess-cavity containing a small sequestrum was disclosed. The cavity was scraped, and the sequestrum removed. Recovery was uninterrupted, and the severe pain that had been present for many years was relieved. On microscopic and cultural examination of the pus, the typhoid bacillus alone was isolated. In explanation of the manner in which the foci of suppuration are caused in cases of typhoid fever, it is suggested that the typhoid bacillus passes from the bowel into the portal system, is carried to the liver, and enters the biliary channels, and finally the gall-bladder, where it may excite suppurative cholecystitis, or form the starting-point of a biliary concretion. Sometimes, however, general blood-infection takes place, and local foci of suppuration are excited, either by the lodgment of bacteria in tissues of low vitality, or by masses plugging minute vessels.

Medical News.

DR. H. L. E. JOHNSON, Washington, D. C., is arranging for reduced rates of transportation to the meeting of the Third Pan-American Medical Congress at Havana, Cuba, Dec. 26-29, 1900.

DR. WILLIAM OSLER, Baltimore, delivered the address at a conversazione of the Medical Graduates' College and Polyclinic, London, on July 4. His subject was "The Teaching of Practical Medicine."

ABOUT the middle of August the Columbia River quarantine station will be ready for service. Work on the wharf and buildings for the disinfecting machinery and bath-rooms was commenced this week and under the terms of the contract must be finished within sixty days.

AT THE coming meeting of the Canadian Medical Association to be held at Ottawa, Sept. 12-14, Mr. Edmund Owen, London, England, will deliver the address in Surgery. Others who will take part are: Drs. Shattuck, Boston; Louis Gerster, A. M. Hamilton and Dr. Fox, New York City; Nicholas Senn, Chicago. Dr. William Gardiner, Montreal, will deliver the address in gynecology.

MATERNITY HOSPITAL.—An effort is being made to establish a maternity hospital at San Juan. The city government has given the land, and the Woman's Aid Society of Porto Rico is trying to raise $25,000 for the erection and equipment of the buildings. This Society is made up mostly of wives of army officers and has done much-needed work in caring for great numbers of suffering women and children.

AMBULANCE WORK IN SOUTH AFRICA.—Dr. J. R. MacNamara, of Chicago, who has been in South Africa in charge of the "Chicago Ambulance Corps," has returned home, after the practical dispersal of the corps. He said that he could not fulfill any of the functions of an ambulance director without having an adequate staff to assist him, and that under the conditions that existed in the Boer army, the operation of ambulance organizations, as we understand them, was an impossibility.

THE "THREE D'S" CRUSADE.—At the meeting of the Oxford branch of the National Association for the Prevention of Consumption, Prof. Clifford Allbutt sketched clearly the main facts as to the nature of the disease and indicated the principles on which preventive measures must be based (*Brit. Med. Jour.*, June 23). He epitomized the precautions as an active crusade against the three D's—dump, darkness and dirt—a crusade which, as he said, every individual could carry out in his own home. In getting rid of these evils, they would at the same time be getting rid of many other pests besides tuberculosis, and would be raising the standard of the general health. There is wisdom in inculcating the general principles of hygiene in public meetings, for general hygiene appeals most strongly to the public mind when its application to a special evil is forcibly impressed.

OHIO.

Cincinnati.

DR. E. W. MITCHELL sails for Europe, July 7, and will be away three months.

THE CINCINNATI Academy of Medicine devoted the evening of June 25 to the memory of the late James T. Whittaker, a notice of whose death appeared in THE JOURNAL, June 9.

AT THE recent examinations for entrance into the United States Marine-Hospital Service, Drs. Edward Francis and John Boggess were two of the six successful candidates, out of forty who competed.

APPOINTMENTS IN COLLEGE OF MEDICINE AND SURGERY.

The changes announced in the faculty for the coming year are: Dr. David De Beck, professor of ophthalmology; Dr. H. P. Dickmen, assistant; Dr. Clark Hiller, physiology; Dr. H. Freudenberger, pathology and bacteriology; Dr C. T. Pearce, dermatology and genito-urinary diseases.

WISCONSIN

DR. W. R. HICKS has been appointed assistant-surgeon in the United States Marine-Hospital Service, and will be stationed at Menomonie.

THE BOARD of Medical Examiners has granted licenses to over one hundred physicians, who had already registered, but who wished this further qualification in order to become members of the State League of Licentiate Physicians, which has recently been formed.

DELAWARE.

AT THE annual meeting of the Medical Examining Board, Dr. Irving Vallandingham was elected president, and Dr. J. H. Wilson, secretary.

AT THE recent examinations conducted by the Medical Council of Delaware, nine physicians were licensed to practice within the state.

KENTUCKY.

DR. E. B. MCCORMICK, of Owensboro, has been appointed superintendent of the Western Lunatic Asylum at Hopkinsville.

KENTUCKY SCHOOL OF MEDICINE.

The fortieth commencement exercises of the Kentucky

School of Medicine were held on the evening of June 26. This school now requires a four years' course before granting a diploma, and is in a flourishing condition. The doctorate address was delivered by Dr. Roswell Park, Buffalo, N. Y. Degrees were conferred on thirty-six graduates.

TUBERCULOSIS.

The Governor of Missouri has issued an edict quarantining cattle from Kentucky because of the alleged existence of tuberculosis among them. Tuberculosis exists among cattle in almost every part of the state and it needs such quarantines to arouse the legislature to the necessity of waging war against this disease. The State Board of Health petitioned the legislature to make an appropriation to prosecute this work, but was unsuccessful. A large sum of money is awarded the boards of health in other states to use in this manner, but Kentucky has only $5000 appropriated for all its work, the inspection of cattle included.

OSTEOPATHY.

All states have been looking to Kentucky as to its course in the osteopathy cases, especially since the masterly decision of Judge Sterling B. Toney, of Louisville, declaring that osteopaths could be prosecuted under the present laws, that they were practicing medicine and should hold regular diplomas from a regular or other recognized school. The case in which this decision was rendered was carried to the Court of Appeals and a decision just rendered reverses the action of the lower court and grants a perpetual injunction against the State Board of Health from interfering with the osteopaths! The opinion holds that the American School of Osteopathy and similar schools are not medical colleges within the meaning of the law, and the act of the legislature does not apply to the graduates from these schools; a graduate from one of these schools is in no sense a physician or surgeon and does not practice medicine. It holds that they may be prosecuted for prescribing or administering medicine or performing surgical operations without holding the certificate of the State Board of Health as prescribed by law.

NEW YORK.

THE ASSOCIATED PHYSICIANS of Long Island met in Northport, June 18. A business session was held in the morning and the afternoon was spent yachting on the bay.

DR. ARTHUR ROSS has been appointed professor of diseases of the throat and nose at the Albany Medical College, to fill the vacancy caused by the resignation of Dr. John M. Bigelow, who has been made emeritus professor.

New York City.

DR. SMITH ELY JELLIFFE left June 28 for a trip through Norway and Sweden.

REAR-ADMIRAL JAMES RUFUS TRYON, U.S.N. (Retired), has been appointed physician-in-chief of Sailors' Snug Harbor, Staten Island.

DR. REGINALD H. SAYRE sailed for Europe June 30, on the *Lucania*.

SENEY HOSPITAL.

The new pavilion for surgical operations, that is attached to the Methodist Episcopal Society, has been opened to the public. It is large, well lighted and well equipped with all modern appliances, and is fire proof. At the dedicatory exercises, Drs. Geo. R. Fowler, John B. Roberts and Lewis S. Pilcher made addresses.

MARYLAND.

PLANS FOR the new building of the Peninsular General Hospital, at Salisbury, have been prepared. It will be a four-story brick building with two three-story octagonal wings, and will have sixty-six beds.

MEDICO-PHARMACEUTICAL ETHICS.

At the recent meeting of the Maryland Pharmaceutical Association, held at Hagerstown, seven rules were submitted which had been drafted by a joint committee of three each from the Association and from the Medical and Chirurgical Faculty of Maryland. Six were adopted: That pharmacists shall refuse to prescribe for customers except in emergency cases, and physicians shall carry emergency remedies only; substitution of one article for another in prescriptions is prohibited; physicians shall regulate their charges and pharmacists theirs; pharmacists not to refill prescriptions when directed by doctors not to do so; druggists must see doctors before filling prescriptions supposed to contain errors; druggists not to disclose contents of prescriptions to customers. These rules will be submitted to the Medical and Chirurgical Faculty for action. The Association refused to endorse the rule that druggists shall not place caution labels unless ordered by the doctor.

Baltimore.

DR. WM A. FISHER sailed for Europe, June 16.

DR. J. J. CARROLL will spend the summer in Europe.

DR. WM. OSLER is in England, where he will remain for the summer.

THE COLLEGE of Physicians and Surgeons has appointed Drs. J. Hall Pleasant and Thomas R. Brown, both graduates of the Johns Hopkins Medical School, as professors in clinical medicine.

THE REMAINS of the late Stephen S. White, passed assistant-surgeon U. S. N., who died recently at Sitka, Alaska, arrived in Annapolis, June 27, and were interred at the Naval Academy Cemetery.

DR. JOHN C. HEMMETER sailed for Europe June 27. He will deliver addresses before the British Medical Association at Ipswich, and before the International Medical Congress in Paris.

THE BARNARD SANITARIUM was incorporated June 27, by Dr. James L. Barnard and others. The purpose is to establish a medical and chirurgical hospital and a nurses' training school. The capital stock is $500, divided into 500 shares of $1 each.

A CHILDREN'S ward has been opened at the City Hospital, and has been furnished by a lady in memory of her son. A separate apartment is provided for each child, and the apartments communicate by folding doors with an intervening play-room. There are already ten inmates.

DEATH DURING CHLOROFORM ANESTHESIA.

On June 20, a man aged 52 died at the University Hospital, during chloroform anesthesia, preliminary to an operation. Three months previously, he had fallen and broken his leg. Under treatment the bones united, but when he began to use crutches, he suffered from severe shooting pains in the limbs. He was advised to have the bones rebroken and reset, and it was while he was being chloroformed, preparatory to examination, that fatal narcosis suddenly took place. The anesthesia was being conducted with an Esmarch inhaler, by one of the resident physicians of the hospital, and all approved measures were employed in the efforts at resuscitation.

CONVICTED OF MANSLAUGHTER.

Dr. George C. Worthington was sentenced to ten years in the penitentiary, for manslaughter, June 27. This is the maximum penalty provided by the law. He was twice convicted of causing the death of Miss Amelia Miller on June 30, 1899, by a criminal operation. After the first conviction, a new trial was granted because one of the jurors was under age. Motion for a new trial was overruled June 26, by the supreme bench. It is said that his attorneys will take the case to the Court of Appeals; meanwhile the judge has refused him bail.

JOHNS HOPKINS HOSPITAL REPORT.

The report of the Johns Hopkins Hospital for the year ending January 31 states that there were in the hospital on that date, 264 patients, of whom 133 were males and 131 females. Of these 203 were white and 61 colored. During the year 3816 patients were admitted, 1963 males and 1853 females. The total number treated—including those remaining from the previous year—was 4074, viz.: white, 3273; colored, 801. Of these 3002 were discharged well or improved, 143 were unimproved, 90 transferred to other departments, and 254 died, while 321 applicants were not treated. The mortality was 6.23 per cent. of the cases treated. The daily average under treatment was 263. The total number of visits made by patients to the dispensary was 58,870.

ILLINOIS.

AT THE meeting of the Jacksonville Medical Club, held June 16, H. C. Campbell was elected president; Edward Bowe, vice-president; D. W. Reid, secretary, and E. F. Baker, treasurer.

Chicago.

DR. J. T. STANTON sailed for Europe, June 30.

DR. W. M. HARSHA sailed for Glasgow on the *City of Rome*, June 30.

DR. PALMER FINDLEY, medical inspector, has returned to duty after a year spent in the hospitals of Europe.

DR. M. MEYEROVITZ has been reappointed by Governor Tanner, a member of the State Board of Health.

AT THE commencement exercises of the German Hospital Training School for Nurses, held June 26, Dr. Julius H. Hoelscher delivered the address.

BY THE will of the late T. B. Blackstone, $25,000 has been left to Passavant Memorial Hospital; $25,000 to St. Luke's Hospital, and $25,000 to the Chicago Relief and Aid Society.

THE COMMENCEMENT exercises of the Harvey Medical College were held June 22. Degrees were conferred on a class of seventeen by the president, Dr. Frances Dickinson.

DR. E. S. PETTYJOHN has sailed for Europe. He will make extensive examinations of different hospitals for the insane in Germany.

AT A meeting of the Chicago Society of Internal Medicine, held June 28, the following officers were elected: president, Dr. John A Robison; vice-president, Dr. James B. Herrick; secretary, Dr. Edward F. Wells; treasurer, Dr. M. L. Good kind. Censor for the North Side, Dr. Henry B. Favill.

THE FOURTH of July in Chicago was attended by less than the usual number of casualties. One man was killed by a stray bullet, and forty-four were injured by fire-works during the day. Heat caused seven deaths and ten prostrations. Seventeen were injured during the Pullman road race.

HEALTH DEPARTMENT.

There are now twelve smallpox patients in the Isolation Hospital. All with one exception are doing well, and this one will probably recover. None of the patients has ever been vaccinated. Dr. Spalding, chief medical inspector, states that of the fifty-nine smallpox patients who have come under the notice of the department in the last sixteen months, not one had a mark denoting successful vaccination. Four smallpox patients were taken from one house on June 16 and 17, members of one family, none of whom had been vaccinated. Four other members of the same family and a number of neighbors who had been vaccinated, were exposed again and again, before the nature of the disease was appreciated, and none contracted the disease. The last patient taken to the Isolation Hospital was a waiter in a club, a member of which was taken ill with a pustular eruption not diagnosed as smallpox, and eventually returned to his home in the country. On June 28, just fourteen days after this waiter had been exposed, he was seized with smallpox, and is now seriously ill at the hospital. Other vaccinated employees of the same club, who had been exposed in the same way, have not contracted the disease.

PENNSYLVANIA.

THROUGH THE will of Mrs. Mary Yost, a resident of Pottstown, the sum of $500 has been given the Pottstown Hospital and a like sum to the Presbyterian Hospital at Perth Amboy, N. J.

OLEOMARGARIN LAWS.

It is said that the Dairy and Food Commissioner recently returned to Harrisburg from Philadelphia, where he had been looking after matters relative to the violations of the oleomargarin law. It is understood that he informed the agents that if they did not obey the instructions of his office they would be discharged. Since the wholesale arrest of parties violating the oleomargarin laws of the state, a considerable number of disclosures have been made public, relative to the manner of ferreting out this crime. At a recent meeting of Pomona Grange No. 5, of Columbia and lower Luzerne counties, a resolution was adopted to the effect that there had been sold 12,000,000 pounds of oleomargarin in Pennsylvania, and further that "whereas the proven complicity of the State officials with violators of the laws passed to prevent injury and fraud, financial and physical, to the people merits the sincerest censure," etc. The resolution ends by demanding the resignation of the Secretary of Agriculture and other officials. It is claimed that the sale of this amount of oleomargarin means a loss of $4,000,000 to the dairymen of the state.

Philadelphia.

THROUGH THE will of Charles G. Trucks a contingent bequest of $2000 will revert to the Pennsylvania Hospital for the Insane.

THE FOLLOWING resident physicians have been chosen to compose the resident staff of the German Hospital: Drs. J. W. Curry, Frank Dye, Paul G. Mueller, Fred M. Paul, and G. H. Hunsicker.

THE AMOUNT of suffering from the heat during the last week of June was terrible. The extreme heat began on June 29, and continued three days. On the 27th there were 3 prostrations reported; on the 28th, 14, and on the 29th, 5.

ON JUNE 29, 11 cases were called before Magistrate Stratton for alleged violations of the pure food laws. Most of the defendants were charged with selling oleomargarin for pure butter, and were held in bail, ranging from $400 to $800.

FOUNDATIONS are being laid for the annex to St. Timothy's Hospital to be known as the Percival Roberts Memorial. The new structure will be three stories in height, and 49 by 139 feet. It will be constructed of brick and terra cotta, and when finished will have cost $55,500.

ON ACCOUNT of the noise and tumult generally aroused on July 4, the mayor gave orders to prevent the firing of guns, pistols, or explosives of any kind within a square of the hospitals; and further, that if anyone was ill at a private house and a request was made to abate the noise, the officer must see to it without further orders.

DIPHTHERIA.

Three cases of diphtheria were discovered in the Italian quarter of West Manayunk, June 23, and an epidemic is feared. It is said that all the residents in the neighborhood are in the habit of slaking their thirst by placing their mouths to a pipe which leads to an adjoining spring. So far no cases have occurred among adults. Prompt action has been taken by the officials to prevent the further spread of the contagion.

CONTAGION IN WALL PAPER.

The work of scientists along the lines of preventive medicine is gradually being disseminated among the laity. The latest indication is the fact that the "Paper Hangers' Union" has issued a public address warning the people against the danger of repapering houses over old paper, on account of contagion. One case is mentioned in which a member refused to place new paper over the old, in a room in which there had been a death from smallpox. There are about 800 paper hangers in the city, 500 of whom belong to the Union.

CANADA.

THE FOLLOWING have been appointed house physicians at the Winnipeg General Hospital: Drs. R. J. Brandson, John Halpenny, Jas. Little, and A. R. Taylor.

QUARANTINE OFFICER Dr. J. C. Sinclair, at Rossland, B. C., is at present having considerable trouble with the people coming in over trails, and thus evading quarantine regulations and proper inspection.

DR. CAMERON, who has been in charge of the smallpox cases in the quarantine station at Winnipeg, has been relieved from his duties, as the patients have all fully recovered.

EXTENT OF LEPROSY IN CANADA.

In answer to questions in the Dominion Parliament by the Hon. Colonel Prior, member from British Columbia, the Minister of Agriculture stated that there were nineteen lepers in the lazaretto at Tracadie, fourteen being from the Province of New Brunswick, one from Prince Edward Island, three from Manitoba (the disease having been contracted in Iceland), and one from Nova Scotia. One of the Manitoba cases

died in 1897, and another in July of the same year. The minister also stated he had been informed of the presence of lepers in the lazaretto at Darcy Island, British Columbia, late in the autumn of 1897. These are not now under the control of the Dominion Government, but are in the hands of the government of the province of British Columbia.

DISEASES OR AILMENTS FOR WHICH PATIENTS RECEIVED TREATMENT IN ONTARIO HOSPITALS DURING 1899.

Appendicitis, 527 cases, 321 being males and 206 females; chorea, 24 males and 54 females; catalepsy, 7 males and 5 females; hysteria, 47 males and 224 females; locomotor ataxia, 28 males and 3 females; spina bifida, 6 males and 4 females; otitis media, 73 males and 60 females; cataract, 113 males and 106 females; glaucoma, 17 males and 17 females; iritis, 63 males and 34 females; fracture of the sternum, 6 males and 1 female; cirrhosis of the liver, 45 males and 15 females; gall-stones, 41 males and 43 females; hydatids of the liver, 1 male; pneumonia, 255 males and 151 females; pleurisy, 134 males and 97 females; phthisis, 359 males and 384 females; diabetes mellitus, 42 males and 14 females; cancer of uterus, 136 cases; fibroid of uterus, 123; ectopic gestation, 18. Of zymotic and general diseases, there were 2 cases of anthrax occurring in men; diphtheria, 203 males and 287 females; erysipelas, 64 males and 70 females; typhoid fever, 891 males and 661 females; cerebrospinal fever, 1 male and 2 females; puerperal fever, 15 cases; gout, 7 males and 2 females; acute rheumatism, 183 males and 179 females; gonorrheal rheumatism, 26 males and 9 females; epithelial cancer, 112 males and 83 females; encephaloid, 15 males and 12 females; schirrus, 12 males and 44 females; melanotic, 1 female; cancer unspecified, 38 males and 45 females; goiter, 7 males and 36 females; tetanus 8 males and 5 females.

Toronto.

DR. R. J. DWYER, Superintendent of St. Michael's Hospital, leaves at an early date to spend a year at the European Hospitals.

THE HOUSE staff at the Toronto General Hospital for the year 1900-1901, has been appointed as follows: From Trinity University—Drs. W. A. Kerr, George A. McLaren, A. T. Stanton, H. A. Smith, and E. Weir; from Toronto University—Drs. E. D. Carder, J. Gow, Goldwin H. Howland, A. C. Kendrick, and A. J. McKenzie.

ST. MICHAEL'S HOSPITAL.

Number under treatment Oct. 1, 1898, 157; admitted, 1905; births in the hospital, 65; total number under treatment, 2127; discharges, including infants, 1843; died, 115; under treatment Sept. 30, 1899, 169; male, 1117; female, 1010. Revenue, $34,929.84; expenditure, $35,059.26. Eighty-five cases of typhoid fever and one of puerperal fever were registered.

ONTARIO MEDICAL COLLEGE FOR WOMEN.

This year's record at the Ontario Medical College for Women has been unusually satisfactory. Gratifying evidence of success is seen in the appointment of three of the graduates to positions as house surgeons in three large American hospitals. Dr. B. Chone Oliver goes to the Women's Hospital, Philadelphia, where Dr. Margaret Gould, one of the class of 1898, holds the position of assistant resident physician. Dr. Mabel L. Hanington will succeed Dr. M. Ethel Fraser, of the class of 1899 in the New England Hospital for Women and Children, Boston, whose resident physician and superintendent, Dr. Stella M. Taylor, is also a graduate of the Ontario Medical College for Women. Dr. Mary E. Crawford succeeds Dr. Minerva Greenaway in the West Philadelphia Hospital for Women. Two members of the class of 1899, Drs. Janet Hall and Anna C. Macrae, have just returned from abroad, having spent a year in the hospitals of Dublin, Edinburgh, London and Paris. One-half the number of this year's graduates have volunteered for service in the foreign field.

THE ITALIAN *Gazetta Ufficiale* announces that 8000 lire have been appropriated by the government for an international congress of physiology to be held at Turin next year.

Correspondence.

No Evidence of Plague in San Francisco.

SAN FRANCISCO, CAL., June 18, 1900.

To the Editor:—Past experiences have fully demonstrated that our professional brethren who are appointed members of health boards are often tainted with a malady common to nearly all politicians, namely, the desire for notoriety derived from sensational newspaper articles appertaining to their respective offices. The sensational reports and interviews sent abroad regarding the so-called "plague" in San Francisco long before sufficient time had elapsed for a scientific or even a superficial examination are striking evidence of this desire, as the etiology of plague is as yet *sub-judice;* and, as the material and opportunity for investigation was limited in the alleged San Francisco cases, the profession will no doubt welcome a critical and impartial analysis of the evidence now before us.

At the April meeting of the San Francisco County Medical Society I discussed two papers read before the society on "Plague in San Francisco," substantially as follows: I have taken no part in the agitation in regard to the so-called "plague" in San Francisco, preferring to wait until the alleged evidence thereof was properly laid before the profession. Careful analysis of the completed evidence justifies me in saying that there is not a scintilla of positive evidence that any of the cases investigated officially or unofficially, can be considered as plague, for the following reasons:

1. More than a year's experience with the plague in Bombay, Calcutta, and other places in India has convinced me that post-mortem examination alone is not sufficient to make a scientific diagnosis, but must be supplemented by the clinical history.

2. None of those who investigated the San Francisco cases had any knowledge of the clinical history; nor had any of them ever had opportunity to observe the various clinical changes that a body undergoes during an attack of the plague.

3. Various contagious and infectious diseases, such as syphilis tuberculosis, actinomycosis, erysipelas, typhoid fever, pneumonia, septicemia, pyemia, "scrofula," etc., are nearly always attended with large and suppurating glands in various organisms of the body.

4. Bacilli invade the blood and internal organs immediately before and after death which can not be differentiated microscopically or by other methods now known to the profession.

5. The bacilli found in the blood, glands and internal organs of a Lascar dying from what was diagnosed as the plague in London, England, differ radically from those alleged to have been found in the San Francisco cases. Those from the Lascar showed no end stains in specimens prepared from cultures, while those in the San Francisco cases showed end stains throughout. This peculiarity caused the London investigators to assume that those found in the Lascar were the true cause of plague.

6. The specimen with which the San Francisco investigators compared their own products has a somewhat interesting history which renders it absolutely worthless as a standard of comparison. During a former plague scare, the Board of Health attempted to palm off this specimen on Dr. Kinyoun as one prepared by Prof. Kitasato while investigating the plague in China for his government. Dr. Kinyoun, however, returned the specimen with a note stating, that, being a diplococcus it might cause pneumonia, but never plague.

7. We have yet to learn whether the alleged Kitasato specimen was obtained from man, animal or culture; it should also be borne in mind that Kitasato claims that the plague is caused by a diplococcus.

8. Inoculation with matter direct from a dead body, causing abscess and death, with finding of bacteria that show end-stains, is not conclusive evidence of plague; nor will such phenomena, caused by inoculation with cultures, be accepted by scientific men as conclusive evidence of infection and death by a specific micro-organism. No reputable investigator has as yet claimed to have obtained pure cultures, and poly- or

pleo-morphism of the bacteria found in plague cases completely obscures bacteriologic investigation.

9. Rats, mice, guinea-pigs, rabbits, monkeys and similar lower animals succumb readily to ptomains and other organic poisons generated during the disease processes allied to plague.

CHAS. G. KUHLMAN, PH.G., M.D.

Association News.

Is Your Address Correct.

A list of members of the AMERICAN MEDICAL ASSOCIATION will be published in an early number of THE JOURNAL. It is important that this list be correct and we would therefore ask each member to examine the label on his wrapper and, if not correct, notify us immediately so that the name may be correctly printed in the list. Subscribers who are eligible for membership and desire to be enrolled are requested to make application at once so that their names also may appear in the published list.

American Medical Association.

The following is a list of the delegates to the Atlantic City meeting:

ALABAMA.

Medical Association of the State of Alabama—Geo. W. Brown, W. E. B. Davis, J. W. Hirst, D. L. Wilkinson.—Total, 4.

ARIZONA.

Arizona Medical Association—Wm. Duffield, Chas. H. Jones.—Total, 2.

ARKANSAS.

Arkansas Medical Society—Edwin Bentley, G. S. Brown, Wm. Britt, Burns, S. P. Collings, J. A. Dibrell, Jno. R. Dibrell, M. S. Dibrell, F. L. French, W. P. Illing, R. W. Lindsey, W. J. Robinson, A. H. Scott.—Total, 12.

CALIFORNIA.

Los Angeles County Medical Association—Norman Bridge.
Pasadena Medical Society—Jas. H. McBride, F. C. E. Mattison.
San Francisco County Medical Society—J. Henry Barbat, F. B. Carpenter.
Mdical Society of the State of California—Wm. LeMoyne Wills.—Total, 6.

COLORADO.

Colorado State Medical Societty—C. E. Edson, A. M. Holmes, S. Law.—Total, 3.

CONNECTICUT.

Connecticut Medical Society—M. A. Bailey, W. L. Barber, C. H. Bill, L. D. Bulkley, F. E. Castle, C. J. Fox, E. G. Fox, R. S. Goodwin, E. D. Hall, N. R. Hotchkiss, J. M. Keniston, R. W. Kimball, C. A. Lindley, S. D. Otis, G. A. Shelton, C. S. Rodman, J. W. Wright.
Fairfield County Medical Society—F. C. Graves.
Hartford County Medical Society—J. W. Beltz, I. G. Case, T. D. Crothers, M. M. Johnson, D. F. Sullivan.
New Haven Medical Association—McDonnell.
Connecticut State Dental Association—James McManus.—Total, 25.

DELAWARE.

Delaware State Medical Society—Willard Springer.

DISTRICT OF COLUMBIA.

Medical Association of the District of Columbia—W. H. Atkinson, N. P. Barnes, J. Wesley Bovée, S. M. Burnett, H. C. Garrow, Ida J. Heilberger, D. Percy Hickling, Harry Hurtt, H. L. E. Johnson, Geo. M. Kober, Frank Leech, D. Olin Leech, S. E. Lewis, Geo. J. Lochboeler, M. G. Motter, Mary Parsons, C. W. Richardson, W. M. Sprigg, J. Ford Thompson, Wm. C. Woodward.—Total, 20.

FLORIDA

Florida Medical Association—J. Harrison Hodges.

GEORGIA.

Medical Association of Georgia—A. W. Calhoun, T. D. Coleman E. L. Connally, W. B. Hardman, J. L. Hiers, Floyd W. McRae, Geo. H. Noble.

ILLINOIS.

Illinois State Medical Society—C. M. Bowcock, C. H. Brobst, George F. Butler, W. J. Eddy, W. A. Evans, Joseph Hall, C. B. Horrell, E. Fletcher Ingals, George N. Kreider, Denslow Lewis, J. H. Miller, J. R. Pennington, M. T. Shutt, George H. Simmons, S. C. Stremmel, F. J. Sullivan, F. H. Werner, H. M. Starkey.
Chicago Academy of Medicine—A. E. Halsted, C. E. Paddock, F. X. Walls.
Chicago Medical Society—Frank Allport, Robert H. Babcock, A. E. Baldwin, Frank Billings, D. R. Brower, R. R. Campbell, F. G. Connell, A. J. Cory, J. Homer Coulter, Richard Dewey, B. B. Eads, Rosa Engelman, H. B. Favill, Christian Fenger, William Fuller, H. T. Godfrey, L. D. Gorges, F. C. Greene, L. L. Gregory, A. Hakanson, R. N. Hall, W. S. Hall, E. L. Hayford, L. Hektoen, J. Hollinger, A. F. Lemke, L. L. McArthur, A. W. McLaughlin, John S. Marshall, Liston H. Montgomery, J. B. Murphy, J. R. Neeley, A. J. Ochsner, Hugh T. Patrick, O. L. Pelton, Robert H. Porter, C. J. Phillips, Edwin Pynchon, Wm. E. Quine, Arthur R. Reynolds, S. C. Stanton, D. A. K. Steele, J. H. Stowell, J. C. Stubbs, E. F. Tansey, H. A. Tyler, S. J. Walker, Ernest Wende, C. A. Wood, T. A. Woodruff.
Chicago Medico-Legal Society—Wm. L. Baum, E. T. Dickerman, Henry Gradle, Norval Pierce.
Chicago Ophthalmological and Otological Society—W. A. Mann.
Chicago Pathological Society—M. Herzog, B. M. Linnell.
Chicago Pediatric Society—A. C. Cotton.
Chicago Society of Internal Medicine—N. S. Davis, Jr., Robert H. Preble, J. H. Salisbury, Fenton B. Turck.
Esculapian Society of the Wabash Valley—Mark Rowe.
Fox River Valley Medical Association—Geo. T. Allen, J. A. Rutledge.
Morgan County Medical Society—Carl E. Black.
Will County Medical Society—Wm. Richards.
Winnebago County Medical Society—D. Lichty.
Iowa and Illinois Central District Medical Association—C. C. Carter, J. P. Comegys, G. L. Eyster, J. R. Hollowbush, E. M. Sala, J. G. Swensson.—Total, 95.

INDIANA.

Indiana State Medical Society—L. L. Ball, A. E. Bulson, L. C. Cline, G. J. Cook, Peter Drayer, L. H. Dunning, Joseph Eastman, J. Rilus Eastman, T. B. Eastman, E. D. Freeman, J. R. Garber, J. K. Geary, H. Graham, C. Hicks, J. L. Hicks, R. E. Holder, J. N. Hurty, J. H. Justice, G. W. H. Kemper, E. M. Kessinger, W. A. Kremer, G. W. McCaskey, P. Y. McCoy, E. J. McOscar, Charles Marvel, J. H. Oliver, L. F. Page, H. O. Pantzer, A. Pierson, M. F. Porter, J. Z. Powell, J. H. Ranke, C. C. Ray, E. E. Rice, W. H. Ristine, F. M. Sawyer, L. Schneck, C. Q. Shull, Martha J. Smith, A. E. Sterne, J. A. Sutcliffe, L. B. Terrill, J. L. Thompson, H. C. Utz, G. W. Van Benschoten, E. Walker, W. P. Whery, F. E. Wiedeman, A. L. Wilson, W. N. Wishard, F. B. Wynn.
Cass County Medical Society—J. A. Little.
Marion County Medical Society—A. W. Brayton.—Total, 53.

IOWA.

Iowa State Medical Society—S. Bailey, J. M. Barston, William Beatty, E. Burd, J. F. Clarke, R. E. Corniff, D. W. Crouse, D. W. Finlayson, Jas. R. Guthrie, Jno. Hamilton, G. F. Jenkins, Wm. Jepson, J. M. Knott, Van Buren Knott, L. W. Littig, Donald Macrae, Jr., W. D. Middleton, E. E. Munger, R. A. Nash, Geo. Park, F. A. Powell, C. M. Robertson, S. E. Robinson, W. Ruml, F. E. Sampson, J. L. Sawyer, J. A. Scroggs, J. C. Shroder, M. W. Thomburg, B. N. Torrey, V. L. Treynor, E. J. Waddey, C. F. Wahrer, A. L. Wright.
Austin Flint Medical Association—N. S. Morse.
Mitchell County Medical Society—A. D. Bundy.—Total, 36.

IDAHO.

Idaho State Medical Society—E. E. Maxey.

KANSAS.

Kansas Medical Society—F. F. Green, R. S. Moyer, W. F. Sawhill, E. T. Shelley, D. W. Williston.
Golden Belt Medical Society—W. R. Crawford.—Total, 6.

KENTUCKY.

Kentucky State Medical Society—Jas. D. Bullitt, T. B. Greenley, W. A. Guthrie, Joseph Hopson, J. W. Irwin, R. C. McChord, J. N. McCormack, L. S. McMurtry, J. Morrison Ray, G. M. Reddish, Dudley S. Reynolds, W. W. Richmond, H. M. Skillman, Leon L. Solomon, J. A. Stucky, Henry E. Tuley, Ap Morgan Vance, Jos. E. Wells.
Carlisle County Medical Society—Wm. L. Mosby, George Payne.
Louisville Clinical Society—M. K. Allen, Thos. P. Satterwhite.
Southwestern Kentucky Medical Society—Jas. P. Lee, W. R. Moss, J. M. Peck, J. R. Scarborough.—Total, 26.

LOUISIANA.

Louisiana State Medical Society—O. Joachim.

MAINE.

Maine Medical Association—Franklin B. Ferguson, Alonzo Garcelon J. Walker, M. C. Wedgwood.—Total, 4.

MARYLAND.

Medical and Chirurgical Faculty of Maryland—M. B. Billingslee, John D. Blake, J. C. Clark, J. E. Crouch, W. H. Feddeman, G. A. Fleming, H. Friedenwald, J. S. Fulton, Nathan Herman, J. T. King, A. D. McConachie, W. H. Marsh, H. O. Reik, J. T. Smith, David Street, Wm. E. Wiegand, T. C. Worthington.
Washington County Medical Society—C. R. Miller, W. M. Nihiser, O. H. W. Regan, V. M. Reichard.—Total.21.

MASSACHUSETTS.

Massachusetts Medical Society—R. P. M. Ames, H. D. Arnold, Walter P. Bowers, G. J. Engelmann, Geo. E. Fuller, E. P. Gerey, F. B. Harvey, Geo. W. Jones, H. O. Marcy, W. H. Merrill, J. L. Morse, J. C. Munro, O. K. Newell, Ezra Palmer, E. G. Parker, G. Ryder, F. G. Smith, E. A. Tracy, A. H. Tuttle, C. O. Thompson, F. G. Wheatley, H. Williams.
Bristol South District Medical Society—D. de N. Hough.
Franklin District Medical Society—John W. Crane.
Hampden District Medical Society—W. M. E. Mellen.
Hampshire District Medical Society—A. G. Blodgett.
Plymouth District Medical Society—Gilman Osgood.—Total, 27.

MICHIGAN.

Michigan State Medical Society—W. C. Gates, W. H. Houghey, Donald Maclean, E. S. Pettyjohn, Victor C. Vaughn, D. W. C. Wade, C. L. Wilbur.
Bay County Medical Society—Louis Plessner.
Detroit Academy of Medicine—Albert B. Lyons.
Detroit Medical and Library Association—J. H. Carstens, Chas. T. McClintock, Fred. W. Robbins.
Wayne County Medical Society—Emil Amberg, R. W. Gillman, C. Henri Leonard, R. P. Loughead, Hal C. Wyman.—Total, 17.

MINNESOTA.

Minnesota State Medical Society—J. W. Chamberlain, J. E. Crewe, A. W. Dunning, Geo. G. Eitel, H. H. Kimball, H. P. Ritchie, F. C. Todd, M. P. Van Der Horck.
Minnesota Academy of Medicine—H. M. Bracken.
Ramsey County Medical Society—Edward Boeckmann, A. J. Stone.
Winona County Medical Society—G. J. Tweedy.—Total, 12.

MISSOURI.

Medical Associataion of Missouri—J. M. Allen, A. H. Cordier, W. B. Dorsett, C. W. Fassett, J. R. Fritts, J. D. Griffith, J. N. Jackson, S. C. James, A. R. Kieffer, M. P. Lewis, F. E. Murphy, C. A. Ritter.
Jackson County Medical Society—Geo. O. Coffin, David R. Porter, J. H. Van Eman, A. M. Wilson.
St. Louis Academy of Medical and Surgical Sciences—James Moores Ball.
St. Louis Medical Society—W. L. Dickerson, H. C. Fairbrother, J. Ellis Jennings, I. N. Love, Justin Steer.
South-East Missouri Medical Association—M. Rosenthal.—Total, 23.

MONTANA.

Montana Medical Association—Donald Campbell, F. W. McCrimmon, T. J. Murray.—Total, 3.

NEBRASKA.

Nebraska State Medical Society—C. C. Allison, J. O. Carter,

B. B. Davis, W. L. Dayton, R. C. Moore, F. S. Owen, J. L. Sutherland.—Total, 7.

NEW HAMPSHIRE.

New Hampshire Medical Society—D. S. Adams, H. W. D. Carvelle, George Cook, J. W. Parsons.—Total, 4.

NEW JERSEY.

Medical Society of New Jersey—H. W. Elmer, D. C. English, J. P. Hecht, E. Hollingshead, A. McAllister, H. A. Stout, J. W. Ward, Charles Young.

Atlantic County Medical Society—W. E. Darnall, Wm. M. Pollard, Wm. M. Powell, E. A. Reiley.

Bergen County Medical Society—D. A. Currie, H. C. Neet, D. St. John.

Burlington County Medical Society—J. J. Flynn, F. S. Janney, Alex. Marcy, W. P. Melcher, R. H. Parsons.

Camden District Medical Society—J. S. Baer, W. A. Davis, W. H. Izard, A. L. Le Fevre, H. F. Palm.

Cape May County Medical Society—B. T. Abbott, W. A. Lake, J. C. Marshall, Eugene Way.

Cumberland District Medical Society—J. C. Applegate, S. T. Day, Jos. Tomlinson.

Essex District Medical Society—C. H. Bailey, Edward J. Ill, Geo. R. Kent, A. Mercer, R. C. Newton, J. W. Read, H. P. Roden, M. Skinner, T. Y. Sutphen, J. T. Wrightson.

Glouscester County Medical Society—J. G. Edwards, G. E. Reading.

Hudson District Medical Society—M. Allen, T. R. Chambers, S. A. Helfer.

Hunterdon District Medical Society—T. W. Bebout, E. W. Classon, Geo. L. Romine.

Monmouth County Medical Society—A. J. Jackson, I. S. Long, S. J. Wooley.

Morris County Medical Society—I. W. Condict, B. D. Evans, F. W. Flagge.

New Jersey State Dental Society—A. Irwin.

Passaic County Medical Society—R. M. Curtz, J. L. Leal, M. A. Mackintosh, J. M. Stewart.

Salem County Medical Society—B. A. Waddington, B. W. Ferguson, E. Morrison, J. B. Pellett, H. D. Van Gaasbeck.

Union County Medical Society—Jas. S. Green, J. B. Harrison, F. C. Ord, S. T. Quinn.

Warren County Medical Society—L. C. Osmann, C. B. Smith, Wm. Stites, A. C. Van Syckle.—Total, 74.

New York State Medical Association—Thos. J. Acker, H. Arrowsmith, Douglas Ayres, L. Grant Baldwin, Lorenzo Burrows, N. B. Bayley, J. P. Brown, J. D. Bryant, Jas. H. Burtenshaw, Henry W. Carpenter, Geo. H. Cocks, Geo. F. Cott, Mary Gage Day, Frank W. Dennis, E. D. Ferguson, H. Gilbert, G. W. Goler, J. W. S. Gouley, J. W. Grosvenor, G. T. Harrison, F. W. Higgins, A. H. Hubbell, A. P. Jackson, A. A. Jones, I. D. Le Roy, M. C. O'Brien, C. S. Parkhill, Charles Phelps, W. Evelyn Porter, Wm. R. Pryor, F. C. Raynor, Frank D. Reese, De Lancey Rochester, N. J. Sands, E. H. Squibb, C. G. Stockton, J. Ullman, G. H. Witter.

New York County Medical Association—J. H. Abrahams, J. H. Asch, W. H. Bates, R. Bayly, Carl Beck, L. F. Bishop, H. J. Boldt, J. R. Campbell, R. H. M. Dawbarn, E. V. Delphey, C. E. Denison, E. Denison, M. Elzarian, L. Fischer, J. A. Fordyce, W. Freudenthal, A. H. Goelet, J. R. Goffe, S. Goldstein, Wm. S. Gotthell, J. A. Gottlieb, E. Eliot Harris, N. J. Hepburn, L. W. Hotchkiss, Wm. J. Irwin, M. W. Jamison, W. H. Leszynsky, Ogden C. Ludlow, Anna Lukens, M. L. Maduro, Thos. H. Manley, Emil Mayer, Jas. B. Moore, Jas. Moran, John Morrisey, C. E. Quimby, T. F. Reilly, W. A. Shufelt, H. M. Silver, L. M. Silver, E. Franklin Smith, H. Stern, Parker Syms, W. S. Terriberry, W. R. Townsend, Jas. P. Tuttle, J. W. Wainwright, J. J. Walsh, A. W. Warden, J. E. Weeks, F. H. Wiggin, J. A. Wyeth, L. W. Zwishon.

Hornellsville Medical and Surgical Association—J. G. Kelly.

Kings County Medical Association—L. C. Ager, John Byrne, A. W. Ford, J. J. Kindred, C. E. Lundgren, E. L. Oatman, J. O. Polak, S. Sherwell.

Den tal Society of the State of New York—Henry D. Hatch, M. L. Rhein.—Total, 101.

NORTH CAROLINA.

North Carolina Medical Society—J. F. Highsmith, Chas. L. Pearson, H. B. Weaver.

Bowan County Medical Society—J. S. Brown.

Buncombe County Medical Society—C. P. Ambler, M. H. Fletcher, Eugene B. Glenn.—Total, 7.

NORTH DAKOTA.

North Dakota State Medical Society—I. N. Wear.

OHIO

Ohio State Medical Society—F. D. Bain, N. R. Coleman, P. M. Foshay, Rufus B. Hall, W. D. Hamilton, F.F. Lawrence, W. J. Means, L. B. Tuckerman, D. C. Wilson.

Academy of Medicine of Stark County—Robt. A. Biechele, Edw. D. Brant, John P. DeWitt, E. J. March, Esther M. Tyrrell.

Adams County Medical Society—J. S. Berry.

Belmont County Medical Society—A. C. Beetham, J. A. Clark, E. C. Cope.

Academy of Medicine of Cincinnati—B. F. Beebe, C. L. Bonifield, J. C. Culbertson, M. H. Fletcher, M. L. Heidingsfeld, C. R. Holmes, Arthur L. Knight, E. W. Mitchell, Edwin Ricketts.

Clarke County Medical Society—Allen H. Vance.

Cleveland Medcal Society—J. E. Cook, Wm. T. Corlett, H. F. House, Wm. H. Humiston, Thos. Chas. Martin, A. J. Pressey.

Clinton County Medical Society—A. T. Quinn, N. B. Van Winkle.

Cuyahoga County Medical Society—Frank S. Bunts, O. B. Campbell, Wm. S. Lower.

Eastern Ohio Medical Association—G. P. Ikirt, J. A. McCullough, E. Pearce.

Muskingum County Medical Society—C. M. Lenhart.

Pike County Medical Society—J. B. Ray.

Toledo Medical Association—W. C. Chapman, A. DeVilbiss, Agnes M. Gardiner, O. Hasencamp.

Union Medical Association of N. E. Ohio—J. T. Marchand, T. J. Reed, E. O. Morrow, R. J. Murphy, O. B. Walter.

Warren County Medical Society—Ortho Evans.

Ohio State Dental Society—W. A. Price, W. H. Todd.—Total, 56.

PENNSYLVANIA.

Medical Society of the State of Pennsylvania—Henry Beates, W. T. Bishop, Alex. R. Craig, Ira J. Dunn, I. C. Gable, Geo. W. Guthrie, John W. Groff, J. A. Horne, T. A. James, A. Koenig, S. W. Latta, F. P. Lenahan, T. M. Livingston, W. B. Lowman, H. S. McConnel, H. G. McCormick, Thos. J. Mays, D. W. Nead, W. M. Pratt, S. D. Risley, J. B. Roberts, L. L. Rogers, Chas. D. Schaeffer, F. Schill, Jr., Thos. B. Schneideman, W. S. Stewart, Lewis H. Taylor, H. F. Tomb, A. W. Urmson, W. M. Weidman, DeForest Willard, J. H. Wilson, John L. Wright.

Allegheny County Medical Society—M. G. Adair, L. F. Ankrim, S. Ayres, E. B. Borland, H. L. Burroughs, M. C. Cameron, J. B. Crombie, J. M. Duff, K. Emmerling, J. J. Green, C. C. Hersman, G. M. Kelly, J. A. Kirk, Wm. H. Kirk, Adolph Lewin, J. A. Lippincot, J. G. McCandless, T. M. T. McKennan, S. H. McKibben, G. W. McNeil, J. W. Macfarlane, E. E. Mayer, E. S. Montgomery, E. H. Small, W. Snively, R. W. Stewart, E. E. Wible, J. E. Willetts, J. H. Williamson, Jas. Witherspoon.

Armstrong County Medical Society—T. F. Stockdill.

Beaver County Medical Society—G. J. Boyd.

Berks County Medical Society—H. Bucher, W. S. Buehler, F. W. Frankhauser, H. S. Reeser.

Blair County Medical Society—W. M. Finley, J. M. Gemmill, J. H. Hogue, J. W. Rowe, O. H. Shaffer, D. K. Smith.

Bradford County Medical Society—G. Conklin, Francis Chaffee, I. H. Woodhead.

Bucks County Medical Society—J. B. Carrell, Wm. S. Erdman, Henry Lovett, J. King Love, Wm. Martin, Geo. A. Parker, E. E. Pownall, Howard Pursell, J. H. Slack, G. E. Stuart, L. S. Walton, A. S. Wilson.

Butler County Medical Society—J. Clinton Atwell, A. C. Davis, T. K. McKee.

Cambria County Medical Society—J. A. Lynch, F. B. Statler, W. E. Troxell.

Center County Medical Society—Edith H. Schad, J. L. Seibert.

Chester County Medical Society—E. J. Hadfield.

Clearfield County Medical Society—F. B. Read.

Clinton County Medical Society—F. P. Ball, J. M. Corson, R. B. Watson.

Columbia County Medical Society—J. W. Bruner, A. Graydon, John J. Stacey.

Cumberland County Medical Society—S. S. Bishop, Geo. C. Borst.

Dauphin County Medical Society—F. W. Coover, J. F. Culp, W. H. Jones, John Oenslager, D. B. Traver.

Delaware County Medical Society—W. K. Evans, Harry Gallager, F. F. Long, M. A. Neufeld, Walter Webb.

Elk County Medical Society—A. B. Revier, Alfred Mullhaupt.

Erie County Medical Society—D. N. Dennis, A. G. Krum, D. H. Strickland.

Fayette County Medical Society—J. L. Cochran, J. W. Gordon, H. B. Guiher, J. S. Hackney, U. H. McMullen, J. S. Van Voorhis.

Franklin County Medical Society—A. H. Strickler.

Greene County Medical Society—J. T. Ullon.

Huntington County Medical Society—Ella M. Gerlock, Bruce P. Steele.

Indiana County Medical Society—W. B. Ansley, L. S. Clagett, A. T. Rutledge.

Jefferson County Medical Society—A. P. Cox, W. C. Newcome, T. R. Williams.

Lackawanna County Medical Society—Reed Burns, C. E. Foster, C. L. Frey, R. H. Gibbons, E. G. Roos, M. J. Williams.

Lancaster City and County Medical Society—S. A. Bockius, R. M. Bolenius, A. G. Bowman, Geo. L. Cassel, W. H. Herr, J. B. Kohler, A. M. Miller, D. W. Syter, A. M. Underwood, W. J. Wentz.

Lawrence County Medical Society—Robt. G. Miles.

Lebanon County Medical Society—S. P. Heilman.

Lehigh County Medical Society—J. L. Hornbeck, P. J. Kress, H. H. Reigel, F. C. Seiberling.

Luzerne County Medical Society—D. Barney, J. T. Howell, F. C. Johnson, Henry Kunkle, C. W. Prevost.

Lycoming County Medical Society—G. F. Bell, S. Davis, W. E. Delaney, N. L. Johnson, J. A. Klump, C. W. Youngman.

Mercer County Medical Society—F. G. Byles.

Montgomery County Medical Society—D. H. Bergey, J. L. Eisenberg, P. Y. Eisenberg, W. McKenzie, L. W. Read, E. E. Richards, H. F. Slifer, J. Q. Thomas, H. H. Whitcomb, S. N. Wiley.

Northampton County Medical Society—B. Haughwout, D. H. Keller, W. H. McIlhany, A. Stout.

Philadelphia County Medical Society—L. H. Adler, H. B. Allyn, O. H. Allis, T. G. Ashton, T. M. Balliet, S. T. Banes, J. M. Barton, Henry Beates, Jr., W. H. Bennett, Bernard Berens, Geo. M. Boyd, C. W. Burr, H. W. Catlett, Robt. H. Chase, Solomon Solis-Cohen, Judson Daland, T. M. Drysdale, A. A. Eshner, C. P. Franklin, M. H. Fussel, Geo. M. Gould, E. E. Graham, W. J. Hearn, F. P. Henry, W. M. Hinkle, Guy Hinsdale, W. W. Keen, A. O. J. Kelly, J. V. Kelly, Ellwood Kirby, D. Braden Kyle, J. P. Mann, E. E. Montgomery, J. H. Musser, C. P. Noble, Jos. Price, Mordecai Price, McCluney Radcliffe, W. D. Robinson, Edwin Rosenthal, J. F. Schamberg, Geo. E. de Schweinitz, B. F. Stahl, Alfred Stengel, Wm. J. Taylor, Frank Woodbury, G. G. Davis.

Schuylkill County Medical Society—A. F. Bronson.

Susquehanna County Medical Society—Samuel Birdsall, Edw. R. Gardner, J. G. Wilson.

Tioga County Medical Society—C. W. Webb.

Venango County Medical Society—J. E. Taylor, W. L. Whann.

Warren County Medical Society—Jas. Gass, W. M. Robertson.

Washington County Medical Society—S. A. Lacock, J. A. McKean, J. N. Sprowls.

Westmoreland County Medical Society—H. C. Diltz, F. L. Marsh, C. E. Snyder, Chas. A. Wynn.—Total, 248.

RHODE ISLAND.

Rhode Island Medical Society—M. E. Baldwin, J. T. Farrell, Frank D. Gray, W. J. McCaw, F. T. Rogers, E. P. Stinson, G. T. Swartz.—Total, 7.

SOUTH CAROLINA

Medical Society of South Carolina—J. L. Dawson.

South Carolina Medical Association—Davis Furnon.—Total, 2.

TENNESSEE.

Tennessee State Medical Society—E. C. Anderson, W. S. A. Castles, A. E. Cox, Duncan Eve, G. W. Gallion, W. F. Glenn, L. B. Graddy, T. J. Happel, J. Y. Herron, Wm. Krauss, G. C. Savage, J. A. Witherspoon, J. S. B. Woolford.

West Tennessee Medical and Surgical Association—J. E. Adkinson.—Total, 14.

TEXAS.

Texas State Medical Association—J. H. Barham, I. E. Dodson,

J. E. Gilcreest, Bacon Saunders.—Total, 4.

UTAH.

Utah State Medical Society—C. P. Hough, Chas. G. Plummer.—Total, 2.

VERMONT.

Vermont State Medical Society—E. S. Allbee, L. M. Bingham, M. R. Crain, George Davenport, D. C. Hawley, J. Sutcliffe Hill, Henry D. Holton, A. I. Miller, C. W. Strobell.—Total, 9.

VIRGINIA.

Medical Society of Virginia—H. C. Beckett, Chas. A. Blanton, L. C. Bosher, John P. Davidson, Jos. A. Gale, J. R. Glidersleeve, B. C. Keister, H. H. Levy, Hugh M. Taylor, J. N. Upshur, J. A. White.—Total, 11.

WASHINGTON.

Washington State Medical Society—W. C. Cox, Fred N. Essig.—Total, 2.

WEST VIRGINIA.

Medical Society of the State of West Virginia—G. A. Aschman, J. F. C. Brownfield, R. H. Cramer, J. L. Dickey, L. Eskey, Wm. P. Goff, R. W. Hall, E. A. Hildreth, T. M. Hood, Z. T. Kalbaugh, D. C. Louchery, J. W. McDonald, D. P. Morgan, J. L. Pyle, R. J. Reed, Wm. H. Sands, C. F. Ulrich.

Harrison County Medical and Surgical Society—Chas. Amos.

Wheeling and Ohio County Medical Society—W. R. Taylor.—Total, 19.

WISCONSIN.

Wisconsin State Medical Society—B. J. Bill, Oscar Chrysler, W. H. Earle, W. B. Hill, W. F. Malone, U. O. B. Wingate, H. V. Würdemann.

Fox River Valley Medical Society—J. S. Reeve.

Milwaukee Medical Society—Lewis Nolte.—Total, 9.

UNITED STATES ARMY.

A. A. Woodhull.

UNITED STATES NAVY.

Robert A. Marmion.

UNITED STATES MARINE-HOSPITAL SERVICE.

Eugene Wasdin.

Report on the Pathological Exhibit.

When it is remembered that the movement to inaugurate a Pathological Exhibit at the Atlantic City meeting of the ASSOCIATION was not begun until the fall of 1899, the results achieved are little short of remarkable. The large amount of labor necessary in placing the Exhibit and the inability of the Committee to learn beforehand what it would contain, have made the preparation of a catalogue out of the question. For similar reasons classification was in many respects faulty. Only a summary of the exhibits is possible in the report, which follows:

Section A—Bacteriology and Clinical Diagnosis.		
Cultures of various pathogenic bacteria	80	
Common urinary deposits	15	
Stained preparations of various blood conditions	30	125
Section B.—Public Hygiene.		
Traveling bacteriological laboratory for diagnostic purposes	1	
Cultures of bacillus icteroides	16	
Cultures of plague bacillus	16	
Diseased meats	97	130
Section C.—Retrogressive and Progressive Tissue Changes. Tumors.		
Gross specimens	14	
Photographs	8	22
Section D.—Disturbance of Development.		
Gross specimens	3	
Photographs	3	6
Section E.—Diseases of Blood-making Organs and Ductless Glands.		
Gross specimens	12	12
Section F.—Diseases of Circulatory System		
Gross specimens	29	29
Section G.—Diseases of Respiratory System.		
Gross specimens	15	15
Section H.—Diseases of Gastro-Intestinal Tract.		
Gross specimens	83	83
Section I.—Diseases of Urinary Organs.		
Gross specimens	91	91
Section J.—Diseases of Reproductive Organs.		
Gross specimens	25	
Photographs	10	35
Section K.—Diseases of Nervous System.		
Gross specimens	25	
Sections of entire brain	9	
Pathological brains, hardened and infiltrated with wax	12	
Photographs of pathological brains	50	
Drawings	25	121
Section L.—Diseases of Bones and Joints.		
Gross specimens	17	17
Section M.—Diseases of Eye.		
Gross specimens	91	
Photographs	18	109
Section N.—Dermatology.		
Gross specimens	2	
Photographs illustrating histopathology of skin	27	
Photographs of cases	44	
Photomicrographs of skin yeast	25	
Cultures of skin yeast	18	116
Section O.—Photographs.		
Illustrating different types of insane	500	
Of different clases of criminals	42	
Sklagrams	43	
Miscellaneous photographs	82	667
Section P.—Miscellaneous exhibits	32	32
Grand Total		1610

Colorado State Medical Society: A. M. Holmes.—Especially worthy of note in this collection were a rhabdo-myosarcoma, an intradural tumor of the spinal canal and a teratoma.

Indiana State Medical Society: Frank B. Wynn.—The largest quota of gross specimens came from this society, which has had a pathologic exhibit at its annual sessions for three years past

Kentucky State Medical Society: James M. Bullitt.—Rare specimens in this display were one of actinomycosis of the lungs and a mammoth ovarian cyst weighing 245 pounds. The effect of the collection was enhanced by the use of Kaiserling fluid as a preservative.

Missouri State Medical Association: Hugo Summa.—This was a collection of high average excellence. Among the rare specimens were pancreas annulare and pentastoma constrictum.

New Jersey State Medical Society: F. W. Bailey and John Bruyere.—The most interest specimens in this display were of cerebral porencephalia, horse-shoe kidney and invaginated intestine.

New York State Medical Association and Carnegie Laboratory: Edward K. Dunham, Leon T. Lewald, Roland E. Benville, D. Hunter McAlpin, Jr., and J. W. Draper Maury.—The collection from New York was conspicuous for the average excellence of the specimens and the beautiful manner in which they had been prepared, Kaiserling fluid having been used to preserve the natural colors. Beautiful illustrations were thus given of the different stages in pneumonia, of pulmonary hemorrhage and tuberculosis, acute and chronic. A remarkable specimen of congenital cystic kidney was in the exhibit.

Wisconsin State Medical Society: H. V. Würdemann and Gustav A. Kletzsch.—This exhibit consisted of a fine collection of diseased eyes mounted in gelatin.

Pepper Laboratory of Clinical Medicine, Philadelphia: Alfred Stengel, C. Y. White, Samuel S. Kneass, George M. Purves, and Joseph Walsh.—Demonstrations were made of the Widal test for typhoid fever. Cultures and cover-slip preparations of the pathenogenic bacteria were also shown; also stained preparations of the various blood conditions, as malaria, leukemia, pernicious anemia, etc., all of which were made interesting and instructive.

Polyclinic Laboratories, Philadelphia: T. S. Kirkbride, Jr., H. D. Williams, Edward A. Shumway and J. Colton Deall—In this exhibit were numerous macroscopic mounts of diseased eyes, with accompanying microscopic sections. One of metastatic carcinoma of the choroid was particularly interesting. It also included photographs of ruptured tubal pregnancy and some ingenious laboratory devices of original pattern.

Medico-Chirurgical College, Philadelphia: Mihran K. Kassabian.—In this exhibit a large number of skiagrams were presented showing foreign bodies, fractures, vesical calculi, and tuberculous conditions of the lungs.

Johns Hopkins Hospital, Baltimore, Md.: William H. Welch and Harry T. Marshall.—In this collection the sequence of pathological changes found in typhoid fever and tuberculosis of the intestines was beautifully illustrated

Lakeside Hospital, Cleveland, Ohio: W. T. Howard, Jr., and Roger G. Perkins.—This collection was excellent. Among the rarer specimens were a myoma of the uterus complicating pregnancy of only a few weeks' duration, typhoid ulcer of the larynx and congenital pia-arachnoid cyst of the cerebellum.

New York Pathological Institute, New York City: Ira Van Gieson and Henderson B. Deady.—Many original drawings were exhibited, a number of gross slides of the brain and a unique and complete method of keeping records of cases, autopsies, etc.

Government Hospital for Insane, Washington, D. C.: A. B. Richardson and I. W. Blackburn.—This exhibit was highly creditable to the pathologic work done in the institution. The large collection of photographs, illustrating the different types of insanity was especially interesting. Noteworthy among the gross specimens were those of brain tumor, hydrocephalus, and extreme atrophy of the convolutions.

U. S. Marine-Hospital Service: M. J. Rosenau.—A very complete traveling bacteriological laboratory, for diagnostic purposes was displayed; also cultures of the bacillus icteroides and the plague bacillus.

U. S. Bureau of Animal Industry: D. E. Salmon.—Diseased meats were collected from various government inspecting stations, and preserved in cold storage, thus enabling visitors to see them in a comparatively fresh state. This display was large

and made an impressive object-lesson in public hygiene. The extensive and multifarious lesions of tuberculosis in animals constituted the striking feature of the exhibit.

Besides the foregoing exhibitors there were many individuals who sent single specimens. It is impossible in this brief report to give all their names. In this list would be included President W. W. Keen, who contributed rare specimens of aneurysm of the aorta and of the renal artery.

The successful inauguration of the first pathological exhibit of the ASSOCIATION has been alike gratifying to the executive officers and to the committee which had the work in charge. It was a wholesome change to have a large exhibit free from commercialism. The ASSOCIATION expressed its approval by making the feature permanent and making a liberal appropriation for its continuance. The valuable service rendered by the large corps of pathological workers can not easily be repaid. No stronger evidence could be adduced of the high scientific spirit and unselfish devotion to the advancement of medical science, which animated their efforts. Their sole compensation is in the consciousness of a great duty well performed and the heartfelt approbation of professional colleagues.

In testimony of appreciation as to the practical and scientific value of the exhibit, the following expressions are quoted from a large number similar in character, recorded in the Register. Roswell Park: "A most interesting and valuable feature of the meeting." Ferd C. Valentine: "Unqualifiedly the most important and instructive contribution to the advance of medical science in the ASSOCIATION. The authors of this exhibit are doing more than if they contributed a thousand papers." Wm. E. Quine: "The most instructive feature of the meeting and extremely creditable to all who contributed."

Prof. Wm. H. Welch, in a letter to the committee, says:

You have done a really great work for the ASSOCIATION, and immensely increased the interest and importance of our meetings by the exhibit and the formation of a Section on Pathology.

Virchow, the renowned father of modern pathology, writes thus concerning the movement:

I have received your letter of April 14, concerning the pathological exhibit. As I wish to help you in this important work, I will send you from Berlin upon my return there, some printed papers. I hope that your countrymen will recognize the intimate relationship of a practical knowledge of pathology, not only to expert diagnosis, but also to successful treatment.

Deaths and Obituaries.

S. S. FOWLER, M.D., died in Marionville, Pa., June 19. He was born in Manchester, England, but spent his youth in Canada, where he was educated in the Toronto schools. He was graduated from the Medical Department of the University of Michigan; and after two years' service in the Civil War, located in Chicora, Pa., where he lived until 1878, when he moved to Marienville. He was vice-president of the Pennsylvania State Medical Association; and had twice represented his county in the legislature.

ALFRED HITCHCOCK, M.D., Farmington, Maine, died June 14, aged 41 years. He was graduated from Bowdoin College and from the Portland Medical School. He then served as house physician in the Maine General Hospital and practiced in Strong, before locating in Farmington. He was a member of the Franklin County Medical Association, and of the Maine Medical Association.

JOSEPH D. SMITH, M.D., St. Joseph, Mo., died June 21, aged 72 years. He was born in Virginia, and educated in Louisville, Ky. During the Civil War he was surgeon of the Ninth cavalry, Missouri State Militia. After the war he located in St. Joseph, where he was for a time professor in Ensworth Medical College.

J. M. MCNULTY, M.D., city health officer, died in Santa Barbara, Cal., June 23, aged 74 years. He was graduated from the Geneva (N. Y.) Medical College in 1846. For a number of years he practiced medicine in San Francisco, but, owing to the necessity for a change of climate, located in Santa Barbara fourteen years ago.

LLOYD N. HORWITZ, M.D., died in Helena, Mont., June 23, aged 38 years. He was graduated from the Jefferson Medical college in 1882, and afterward served for some time as resident physician in the Philadelphia Hospital.

T. SUMTER MEANS, M.D., Spartanburg, S. C., died June 18, aged 68 years. He was graduated from the medical department of the University of Pennsylvania in 1859. He began the practice of his profession in Glenn Springs, but twenty years ago moved to Spartanburg.

WILLIAM F. HOWARD, M.D., Lawrence, Mass., died at his home, June 14, of typhoid fever, aged 31 years. He was graduated from the Bellevue Hospital Medical College in 1896. He was a member of the staff of the Lawrence General Hospital.

SAMUEL LUCHSENGER, M.D., Milwaukee, Wis,, died June 23, following an operation for appendicitis. He was graduated from the Milwaukee Medical College in 1898.

GEORGE S. WARD, M.D., Newark, N. J., died June 25, aged 73 years. He was graduated from the College of Physicians and Surgeons in New York City in 1849.

KING WYLLY, M.D., University of Virginia, 1869, of Savannah, Ga., formerly of Sanford, Fla., died suddenly from apoplexy at Saratoga, N. Y., June 24, aged 50 years.

HENRY LEINFELDER, M.D., Prairie du Chien, Wis., died June 20, after an operation for appendicitis. He was a graduate of the Milwaukee Medical College of the class of '97.

F. M. LOGSDON, M.D., Bieville, Texas, died June 16, aged 45 years. He was graduated from the Louisville (Ky.) Medical School in 1892.

J. W. WINGARD, M. D., Martinsburg, Pa., died June 14, aged 64 years. He was graduated from the University of Pennsylvania with the class of 1860.

B. W. MACNICHOL, M.D., Jefferson Medical College, 1884, died in Westchester, N. Y., June 22.

DEATHS ABROAD.

We note the deaths of:

PROFESSOR KORSAKOFF, of Moscow, the author of numerous works on neurology, etc., editor of the journal established by the Pirogoff Medical Society, and co-editor of the *Klinitchesky Journal*.

PROF. C. T. CRUDELI, of Italy, senator and formerly member of the medical faculty at Rome.

New Instrument.

New Leg Holder Securing a Perfect Lithotomy Posture Without Assistants.

BY WILLIS W. DEAN, M.D.

SIOUX CITY, IOWA.

The crutch here represented is made of light gauge bicycle tubing of various sizes, which telescope one within the other

Dean's Gynapod.

both when adjusted and when packed for transportation. It consists essentially of a cross-bar made in three separate pieces, each twelve inches long, the two outer and larger pieces telescoping the center one, working on it with a sliding motion, and capable of being fixed at any required length by set-screws. It also has two bands or half circles, also adjusted by set-screws, that slide on the cross-bar, and fix the thighs at any required angle from the body. Into each end

of the bands are eyelets to which is attached the strap that passes over the shoulders. When in working order, the cross-bar will be under the knees, and the bands around the inner portion of the thigh immediately above the knees. This will give any position desired, and to maintain that position I have devised leg attachments, also made of tubing, and sliding on each end of the cross-bar. The legs are each made in two parts, and may be lengthened and shortened with ease. On the distal end of each is placed a crutch-cap to prevent slipping when adjusted for work. This is a very satisfactory device, as it secures the lithotomy posture, and fixes the legs at any desired angle from the body. It can be adjusted and used on any table, chair, bed or lounge, is aseptic throughout, and weighs in its entirety less than three pounds. It is inexpensive, very portable, and the cross-bar and legs can be packed in two pieces, the greatest length being one foot.

Miscellany.

Program of Entertainments, International Medical Congress.—Aug. 2, the day on which the Congress opens, a fête will be given in the evening by the president of the council in behalf of the French Government.

Aug. 3.—A fête will be given in the evening by the President of the Congress.

Aug. 5.—Reception for the members of the Congress, by the President of the Republic, at the Palais de l'Elysée.

Aug. 7.—A fête will be given by the Municipal Council of Paris in the Salons of the Hôtel de Ville.

Aug. 8.—A fête will be given in the evening in the Palais du Sénat and the Jardin du Luxembourg, by the officers and organization committees of the Congress.

Other entertainments have been arranged in most of the Sections. The wives, daughters and sisters of members are included in the invitations to these entertainments. A committee of ladies has been formed to receive and entertain the wives, daughters and sisters of members of the Congress.

Pentosuria.—Among the group of glucoses are found bodies containing five carbon atoms and carbon and oxygen in the proportion to form water. These bodies are called pentoses. Salkowski and Jastrowitz (*Centralblatt f. die Med. Wissenschaften*, 1892) have found pentose in diabetic urine. Kütz and Vogel (*Zeitschrift f. Biologie*, 1896) have found pentose in the urine of diabetes mellitus and diabetes induced by phloridizin respectively. Since the quantity of pentose excreted was insignificant, and has been found in connection with glycosuria, its detection was of no practical value. Later, however, Blumenthal (*Berliner Klin. Woch.*, 1895, No., 26, 1897, No. 12) and Salkowski (*Zietschrift f. Physiologische Chemie*, 1899) have reported each one case and recently Biat (*Zeitschrift f. Klinische Medizin*, 1900, p. 473) reported two additional cases of chronic pentosuria wherein this carbohydrate was excreted by itself. Since urine containing pentose gives the same reaction as grape-sugar with Trommer's test and Fehling's solution, and such a patient may be subjected unnecessarily to the hardships of the restricted diet of a diabetic, it is obvious that in order to avoid such blunders. all urine containing sugar when detected by the above tests should be controlled by other tests.

Pentose, unlike grape-sugar, is unfermentable, and does not polarize light to the right. The general use of the polarimeter is precluded on account of its cost, but the fermentation test should be made with Einhorn's cheap fermentation apparatus, which requires but a few minutes to prepare. Notwithstanding the fact that only four cases of chronic pentosuria have been reported up to the present, it is to be expected that when the differential tests are made in all urine containing sugar, the number of cases of pentosuria will increase, and eventually some light will be thrown upon the origin and significance of this hitherto unexplained phenomenon.

Can This be True?—The Illinois State Board of Health has just learned that a medical college, a member of the Association of American Medical Colleges, and one which was in good standing with this Board, admitted to the senior class of the institution last January, and is about to graduate, an applicant who presented evidence of having taken one course of lectures in a medical institution in Chicago, and of having "passed the first and second doctorate" in "the University Libre of Brussels" in November, 1899.

According to the records of the State Board of Health the medical history of this candidate is quite interesting. It appears that he practiced illegally in Chicago in 1894, and to avoid prosecution appeared before this Board to undergo examination in the undergraduate branches. He then claimed to have studied medicine for four years and had attended three courses of lectures in the Amsterdamche Universeit, Holland. Failing in this examinataion he became connected with the so-called "Illinois Health University," and with J. Armstrong, T. A. Bland and other lesser lights, issued diplomas to all comers until the supreme court of the state, in 1897, deprived this concern of its corporate privileges. Later, with the persons named he conducted the so-called "Independent Medical College," the immediate successor of the "Health University," and disposed of diplomas as heretofore. According to the published announcements, he held the "chair" of Practice of Medicine in both institutions.

Being convicted of illegally practicing medicine in 1898, on suit brought by the State Board of Health, this applicant who passed the "first and second doctorate," went to Michigan, and shortly aftetrward, as agent of the "Independent Medical College" took a trip to India, in which country he disposed of many hundred "diplomas" issued by this corporation. He returned to the United States late in 1899, and it is presumed by the Board, that on his route he dropped off at Brussels and, visiting the "University Libre," passed the "first and second doctorates."

The secretary of the Illinois Board, in commenting on the matter, to the dean of the college in question, makes the following pertinent remarks:

"For the information of this Board I will ask if it is the custom of your faculty to grant two years' advanced standing to persons who present credentials showing that they have passed examinations at certain universities in the United States and abroad? I can see no evidence of attendance upon any courses of lectures; in fact, I do not believe that you hold there was any such. Were the examinations referred to, the passing of the "first doctorate" and the "second doctorate," bona fide, and taken in any reputable university in the world, there would be no justification whatever for the granting of advanced standing. Your action is not only in violation of the rules of this Board, of the Association of American Medical Colleges, but also of your own published requirements, which state in effect that you demand of each student as a condition of graduation an attendance upon four full courses of lectures in four separate years."

Sanatorium for Lepers in France.—It is estimated that there are about four hundred lepers in France. They are scattered about in Brittany, in the Pyrenees, on the shores of the Mediterranean, and in Paris, where they number 150. Among the lepers there are missionaries and nurses who have fallen victims to their devoted care of sufferers in other countries, and officials and soldiers who have contracted the disease in the colonies. An anti-leprosy committee has recently been formed on the initiative of Dom Santon, a member of the Benedictine Community of Ligugé, who is also a doctor of medicine, for the care of the lepers in France and the prevention of the spread of the disease. Dom Santon has for many years past devoted himself to the study of leprosy, traveling for that purpose in many parts of the world. After conference with the Council of Hygiene he has acquired a property in the Vosges, where he proposes to establish an asylum for lepers to be called the St. Martin Sanatorium. The plans have been approved by the French Government.—*Brit. Med. Journal.*

"Osteopathic" Examining Boards.—The osteopaths of Ohio wanted a State examining board of their own. All other empirics or quacks would doubtless also like to be examined by boards of their own choosing. This would make all examining boards superfluous.—*N. Y. Med. Journal.*

Societies.

COMING MEETING.

MICHIGAN STATE MEDICAL SOCIETY.—Mackinac Island, July 11-12, 1900.

COLUMBIA COUNTY MEDICAL SOCIETY.—The annual meeting of this Socity was held in Bloomsburg, Pa. June 19. The officers elected were: president, J. S. John, Bloomsburg, first vice-president, A. B. McRae, Berwick; second vice-president, H. W. McReynolds, Bloomsburg; secretary and treasurer, W. M. Reber, Bloomsburg.

SIOUX VALLEY MEDICAL ASSOCIATION.—The fifth annual meeting of this Association was held in Sioux Falls, S. D., June 20-22. The following officers were elected: president, J. N. Warren, Sioux City, Iowa; first vice-president, M. W. Richey, Le Mars, Iowa; second vice-president, G W. Cross, Yankton, S. D., secretary, G. G. Cottam, Rock Rapids, Iowa; treasurer, S. A. Brown, Sioux Falls, S. D. The 1901 meeting will be held in Sheldon, Iowa.

CENTRAL WISCONSIN MEDICAL SOCIETY.—At the annual meeting of this society held at Madison, June 26 and 27, the following officers were elected: president, J. M. Evans, Jr., Evansville; first vice-president, John E. Doll, Lake Geneva; second vice-president, J. A. Jackson, Madison; third vice-president, W. H. Palmer, Janesville; fourth vice-president, C. A. Rood, Reedsburg; censors, Carl Kordenat, Reedsburg; S. B. Buckmaster, Janesville, and J. F. Bennett, Beloit; Clarke Gapen, Madison; secretary and treasurer, C. S. Sheldon, Madison.

Philadelphia Academy of Surgery.

June 4, 1900.

Vice-President, Dr. J. R. Harte in the chair.

CYST OF THE THYROID.

DR. R. G. LECONTE reported a case of unilateral cyst of the thyroid, occurring in a man aged 28. It had existed for about four years, constantly became larger, and at last caused pressure symptoms. At the operation, Kocher's angular incision was made, the superficial veins were ligated and the tumor removed. On the tenth day an uneventful recovery was reported.

TUBERCULAR PERITONITIS.

DR. LECONTE also reported a case in which abdominal section was made, with drainage: fecal fistula later developed, necessitating end-to-end anastomosis. The duration of the disease was somewhat indefinite. A large collection of straw-colored fluid developed in the abdomen, which was withdrawn, ninety-four ounces being removed at one time. The blood count showed 5,600,000 red and 50,000 white corpuscles, and later the hemoglobin fell to 57 per cent. Great emaciation was noted, and at one period the patient weighed only sixty-five pounds. The abdomen was opened and drained, but a fistula persisted. This was curetted, a drainage-tube was inserted and gauze packing placed about it. Owing to non-union the wound was again opened several weeks afterward and it was found that a considerable amount of gauze had remained at the site of the operation. An end-to-end anastomosis was done by means of the O'Hara forceps and recovery ensued. In his opinion the presence of the gauze probably aided in the cure, as it ensured drainage.

DR. G. G. DAVIS had several years ago operated on a similar case, in which he believed that the introduction of strips of gauze might have been of greater avail than washing with normal saline solution, which had been employed.

EXCISION OF SUPERIOR MAXILLA.

DR. R. H. HARTE reported a case in which he had excised the superior maxilla for a tumor involving that region. The first incision was carried upward from the angle of the jaw to the outer edge of the upper lip, then onward to the opposite side. Another incision followed the inferior maxillary bone, then upward to about the middle of the nose. Recovery ensued on the tenth day.

PERFORATING GASTRIC ULCER.

DR. HARTE reported a case simulating appendicitis, in which the onset was sudden and the patient in a state of collapse on admission to the hospital, with pain in the region of the appendix. The abdomen was hard. At the operation, the appendix was found only slightly abnormal; it was, however, noticed that a large amount of gas escaped on primary incision. The wound was closed but the patient died, and at the autopsy, a perforating gastric ulcer and several other small ulcerated spots were found. Statistics of operations for this condition show a mortality of about 89 per cent.

ANTITOXIN IN TETANUS.

DR. ADDENELL HEWSON reported a case of tetanus in which antitoxin had been repeatedly used, without effect.

DR. G. G. DAVIS believed that the question of the beneficial effects of tetanus antitoxin was still unsettled. He had two years ago reported two cases in which cure had been attributed to this remedy, but lately had lost two of a similar nature, in which the antitoxin had been used.

DR. W. J. TAYLOR believed that writers who have reported most cures from the use of antitoxin have generally given the remedy in more or less chronic cases. It is important, therefore, that the type of the disease be specified. In acute cases, he believed that full doses of bromids and chloral, frequently repeated day and night, would be as beneficial as antitoxin. His attention had been called to the tendency for tetanus to develop after injury due to the explosion of fulminating caps, which had been attributed to the character of a certain kind of earth which is usually used in the manufacture of these explosives.

DR. LECONTE had seen six or seven cases of acute tetanus with only one recovery, and in this case full doses of chloral and bromids had been given.

Colorado State Medical Society.

Thirtieth Annual Convention, Denver, June 19-21.

The following recommendations of the committee on literature for the education of the public with regard to quackery were unanimously adopted:

1. That the Society appropriate the sum of $25 to be awarded in prizes by a committee of three appointed by the incoming president, for the best essays pointing out the dangers to the public health and morals, especially to the youthful members of the community, from quackery as promulgated by public advertisements.

Such essays, if deemed satisfactory to the committee of award and suitable for popular distribution, should be published by said committee of award in one or more medical periodicals, and reprints of same furnished to the members of this Society for gratuitous distribution.

2. That the secretary of the Society send out a circular letter to the editors of all medical periodicals published in the United States, requesting them to publish from time to time, a list of such lay periodicals whose columns are free from advertisements tending to debase and deceive the public.

3. That the Society send the following letter:

The Colorado State Medical Society to the Colorado State Editorial Association, Greeting:—The evident lack of censorship, on the part of the daily and weekly press, of advertisements tending to encourage bestiality, criminal lust and the commission of the crime of abortion, together with the purpose on this Society's part to lessen as far as possible the unhealthful and injurious effect of quackery, especially upon the young, led it to call your attention to the fact of the gross immoral and health-injuring character of advertisements which are accepted for publication by newspapers of to-day. It is assumed that carelessness rather than wilful intent on the part of a calling endowed with higher and nobler purposes is to blame for this state of affairs.

This Society, therefore, respectfully and earnestly recommends and requests that you take up and discuss this matter and establish for objectionable advertisements a limit beyond which newspapers and periodicals represented in your Association can not go and remain in good standing.

Wishing to hear from you on this matter, and assuring you of our cordial desire to aid as we may be able to do in this work, we remain Yours respectfully,

COLORADO STATE MEDICAL SOCIETY.

The election of officers resulted as follows: president, W. P. Munn, Denver; first vice-president, R. F. Graham, Greeley; second vice-president, W. T. Little, Canon City; third vice-president, William Dow, La Junta; corresponding secretary,

H. B. Whitney, Denver; recording secretary, M. C. T. Love, Denver; assistant recording secretary, W. A. Kickland, Denver; treasurer, W. J. Rothwell, Denver; trusteees, J. T. Eskridge, A. Steadman, W. E. Wilson, S. A. Solly, E. J. A. Rogers, H. Works, of Pueblo, J. H. Hall; committee on membership, Drs. S. G. Kahn, of Leadville, C. K Fleming, C. A. Powers, D. F. Dayton.

Chicago Surgical Society.

May 11, 1900.

LIPOMATA.

DR. JOHN E. OWENS reported two cases. The first was that of a woman, who, some years ago, called him to the southern part of the state to operate for appendicitis. There was tumor, pain, nausea and vomiting. The tumor and pain were located in the region of the appendix, and on examination he found a movable mass, slightly tender on pressure. At the time of his visit, the acute symptoms had subsided and she felt fairly well. The attacks were recurrent and quite severe, but were relieved by small doses of salines. Whenever the bowels began to move, the symptoms rapidly disappeared, and in the course of a few days she would be well. She had advanced heart disease, and the cardiac symptoms at each attack were so distressing that she insisted on an operation, although she was informed that she might die on the table. She died about two days after the operation, from cardiac disease. There were no wound complications. The original diagnosis was made in a tentative way. The opinion was expressed that the tumor had too much mobility for an inflamed appendix, and that it was not sufficiently movable for a floating or movable kidney. Being approximately ovoid and about two inches in length, the tumor and its surroundings closely resembled a small kidney, and a concavity, corresponding to the hilus of the kidney, could be felt, and also the outer convex surface, but still the mobility was too slight for a floating kidney. When the operation was performed something was found in the colon just above the ileo-cecal valve, and on opening the bowel, a submucous fatty tumor was discovered. The conditions seemed to be such as to have eventually led to a spontaneous cure, inasmuch as the mucous membrane over the outer parts had ulcerated. It was enucleated and, without stitching the mucous membrane, the bowel was closed in the usual manner. The location of the tumor, as well as its variety, and the diagnosis are points of interest.

The second case, which he saw with Dr. I. N. Danforth, was that of a lady about 60 years of age, who had a large tumor of the thigh, of twenty-five years' growth. It extended from Poupart's ligament to the patella, and apparently involved the whole circumference of the thigh, twenty-nine inches. A shallow depression extended from the popliteal space to the ischium. The tumor was painless, but lately she had found it in the way during walking and sitting so that she was necessarily confined to the house. He first thought it was a cyst, and on Dr. Danforth's inquiry as to what would be done in regard to it, he answered it should be tapped and its contents determined. She was admitted to St. Luke's Hospital and the thigh tapped, with a negative result. He thought that it was a cyst because of its uniform consistency, its slow growth, and the absence of dimpling, so common in fatty tumors. Furthermore he had previously observed, in the case of fatty tumors, the tremulous impulse elicited by striking it with the fingers. This was very evident even when the tumor was struck at one extremity of its long diameter while the hand was applied to the other. This led him to believe that the tumor was a cyst with gelatinous contents, but considering the possibility of the existence of a sarcoma, he made a small opening through the skin, inserted a strong bullet probe and succeeded in reaching the superior surface of the femur. The bone felt natural and smooth. The question of cyst and sarcoma was abandoned and, on dissecting a little further, a lobule of fat presented itself, which made the diagnosis of lipoma clear. The operation was long, as the muscles on the front of the leg were spread over it in several irregular layers, and their fasciculi and aponeuroses so involved with the growth as to render its removal somewhat difficult. The vessels were pushed by the growth inward and downward. The patient made a good recovery.

DR. DANIEL N. EISENDRATH had seen a very interesting case of diffuse symmetrical lipomatosis in a man, who exhibited himself all over Europe. A large fatty tumor was removed from the neck, but returned within six months, behaving apparently like a malignant growth. It is supposed that these tumor have some relation to nerve influence, as they are associated with certain disturbances of the spinal nerve. Dr. Owens' case was interesting, as it in some way resembled a malignant growth pushing aside the muscles and aponeuroses, springing from the intermuscular tissue and invading the surrounding tissue like a malignant tumor. He had looked up the statistics of the weight of the lipomata, and found one recorded which weighed fifty pounds, although tumors weighing over ten are rare. The one removed by Dr. Owens must have weighed about twenty-five pounds.

CHOLECYSTECTOMY AND CHOLECYSTOSTOMY.

DR. ERNEST J. MELLISH discussed these operations and reported cases. The first was cholecystectomy, in a married woman, aged 57; family history negative. Her husband died of gastric carcinoma in 1894. She had always felt well until February, 1899, when she had double lobar pneumonia and was in bed eight weeks. During this time, a firm swelling about the size of a man's fist was for the first time noticed in the right hypochondriac region. It was but slightly tender to pressure. There was neither jaundice, colic, nor any special symptoms indicating disease of a particular organ. She never fully recuperated after this illness, and about the first of August she had severe pain in the lumbar region, radiating down both thighs. At the same time, she began to experience difficulty in stooping and walking, severe pain in the region of the swelling when coughing, and there was progressive emaciation. Diagnosis of chronic, progressive swelling within the abdomen was made by Drs. F. W. Bromley and L. H. Prince, of Palmyra, Wis., and operation advised.

He did not see the patient until the day of the operation, Sept. 16, 1899. She was much emaciated and cachectic, but not jaundiced, the swelling, which seemed as large as a medium-sized cocoanut, produced an elevation of the abdominal wall over it of perhaps 5 cm. above the level of the surrounding surface. The swelling was situated above the colon, was almost unyielding to pressure, and moved very little during respiration, but appeared to be connected with the liver. He thought that the gall-bladder formed a portion of the mass, that it was probably a carcinoma, but might possibly be a case of cholelithiasis. The operation was performed in the Palmyra Springs Sanitarium, under chloroform anesthesia. Exploratory incision was made over the swelling, parallel with the costal margin. On opening the peritoneum, it was found that almost the entire greater omentum was gathered into a mass over the fundus of the gall-bladder, and was firmly adherent to the anterior border and upper surface of the right lobe of the liver and to the parietal peritoneum, so that it was impossible to palpate the gall-bladder. The thick mass of tissue over the gall-bladder was supposed to be carcinomatous. The omentum was tied off in very small sections—a better method than ligation in large masses—as it permits palpation of the lower surfaces of the gall-bladder and the ducts, revealing the presence of large calculi. There were no adhesions on this surface of the gall-bladder below the fundus. The liver was then incised at a safe distance from the swelling—using gauze compresses to control hemorrhage—and the separation completed with the fingers. One of the calculi was wedged into the cystic duct as far as its junction with the common duct. After walling off the peritoneal cavity with gauze, a transverse incision was made over this calculus, which was removed, and the incision across the dilated duct completed. The duct was closed with two rows of Lembert sutures, strips of gauze being passed down to the stump, and packed against the cut surface of the liver, and the abdominal wound closed in separate layers. There was a slight discharge of bile through the drain for a few days, presumably from the cut surface of the liver. Pus formed in the track of the drain; and on the third day, a tubular was sub-

stituted for the gauze drain. In a week, the tube was removed and the abdominal wound closed rapidly. For three days the patient hovered between life and death, with adynamic obstruction, although calomel had been given on the first day and no opiate whatever. The temperature and pulse remained near normal; there was no marked tenderness, and the facial expression was not bad. He was convinced that there was no serious infection, though the tympanites increased sufficiently to seriously impede respiration. On the second day she began vomiting; her stomach was washed out, and very small nutrient enemata were administered. Strychnia was given in 1/40 to 1/30 gr. doses every three hours. Large saline and glycerin enemas were given, then enemas of soap and water, turpentin, and, finally, asafetida and olive-oil. The asafetida enemas alone seemd to do any good. The abdomen was firmly compressed with bandages during the whole time as it was markedly tympanitic. Since convalescing from the operation, the patient has been well and able to perform her usual work.

The mass removed was about 10 cm. long, and 5 cm. wide; its long diameter being in the transverse axis of the body, antero-posteriorly. It consisted of the gall-bladder, containing seven calculi and a large mass resembling inflammatory tissue, which included the remains of the omentum. In the mucous membrane of the gall-bladder several irregular ulcers with well-defined, non-indurated margins were found, two or three of which had penetrated nearly to the peritoneal covering of the viscus. A microscopic section made through one of these ulcers at a right angle to its surface, showed round-celled inflammatory infiltration, and, in the deep layers, nests of cells surounded by a connective-tissue stroma, as in carcinoma. The largest of the stones was conical, wedged into the cystic duct, and weighed 6.5 grams; the smallest stone weighed 2.7 gm., and the seven together weighed 27.2 gm. The fact that this patient's husband had had gastric carcinoma might give rise to the suspicion of a common cause in the two cases, although the irritation produced by the calculi, during the many years they must have been in the gall-bladder, might easily lead to malignancy.

Statistics give an average mortality in cholecystectomy of 16 to 18 per cent., due to the operation. This high rate may be attributed largely to the postponement of operations until all become practically emergency operations, as there is no reason why the procedure in itself should be especially dangerous.

When considering cholecystectomy the question arises: Of what use is the gall-bladder to the human economy? There are several theories regarding its function, but no one knows what that is. He is disposed to agree with those who believe that its chief function is to serve the operative surgeon, as it is certainly of so little importance that the economy does not suffer perceptibly when it has been extirpated; consequently it should be removed, if feasible, when in cholelithiasis it is certain that there are no stones in the common duct, and in other conditions of disease confined to the gall-bladder itself, in which there is a strong tendency to chronicity or to cholelithiasis.

There is much variance of opinion regarding the amount of bile secreted in twenty-four hours. Murchison was able to collect but 480 c.c. Some physiologists claim that the daily amount of bile secreted is from one to two times the weight of the liver. The adult liver weighs from 1850 to 2000 grams; the capacity of the normal gall-bladder does not exceed 31 c.c., therefore the function claimed for it, that it is a receptacle for bile between the periods of active digestion, is untenable. Moreover, the gall-bladder is so inelastic that it can not discharge more than 2 to 4 c.c. at a time. The normal gall-bladder is never found empty, and the specific gravity of its contents is always higher than that of the bile in the ducts. Another noteworthy fact is that the gall-bladder secretes in twenty-four hours from 15 to 20 c.c. of fluid of acid reaction, containing no bile salts. The theory that the gall-bladder acts as a controller or governor of the bile circulation in the same manner that the air-chamber acts in a fire-engine to produce a steady, instead of a pulsating, flow, is not supported by any positive evidence. The theory that it is a rudimentary organ, like the vermiform appendix, is not supported by analogy, since the gall-bladder is not relatively much larger in any of the lower animals than in man, and some of them—the elephant, and mouse, for example—have none.

The second case was cholecystostomy in a single female, aged about 45 years, who suffered from menopause neurosis and symptoms of gall-stones, who was referred to me by Dr. Prince. She had had her first attack of colic fifteen or sixteen years before, and for the next ten years had an attack every ten or twelve months. The attacks gradually increased in severity and lasted from twelve to twenty-four hours. About 1894, they became more frequent, occurring every few weeks; and in 1895, she had an attack lasting eighteen hours or more, accompanied by repeated chills and frequent, very watery, black bowel movements, "full of small, black, seed-like particles." From 1896 till 1898, the intervals between attacks became shorter, until the pain returned almost daily, but lasted only six to eight hours. From October, 1898, till March, 1899, She was nearly free from colic, but from that time on the paroxysms occurred every few hours and the pain became steadily worse. During the attacks, there was always some tympanites; and since 1897, tympanites and tenderness were relatively constant features of the attacks. Latterly there was considerable local hyperesthesia, probably due in part to her functional neurosis. As a rule, the bowels were constipated during, and normal between, attacks. The pain was paroxysmal, and up till 1898 it began in the epigastrium, radiating downward and to the right. After this the pain began in the same place, but radiated toward the left shoulder. Jaundice did not occur. For some time before the operation she was in the Palmyra Springs Sanitarium, and fruitless search was made for stones. On May 15, the following operation was performed:

Under chloroform anesthesia an incision was made parallel with the costal margin, the peritoneal cavity packed off with gauze and the gall-bladder opened. It contained bile-stained mucus, but no calculi could be found either in the bladder or the ducts. The mucous membrane of the gall-bladder was very red. The viscus was sutured to the parietal peritoneum and a gauze drain inserted. At the first dressing, tubular drainage was substituted, and for a few days, thick bile-stained mucus was discharged. After this, there was very little discharge, and, in a month, the fistula was allowed to close. No calculi were discharged, either through the fistula or the bowel. The patient had two or three slight attacks afterward, simulating renal colic, but has had none for more than nine months. At the time of operating, the gall-bladder was dilated and the uterus curetted for anteflexion and hyperplastic metritis.

These two cases illustrate that often when we expect to find gall-stones none can be found; and that, on the other hand, we often find them where there have been no special symptoms indicating their presence. Many cases of chronic gastric or gastrointestinal disturbance, without definite symptoms pointing to the liver or gall-bladder, are undoubtedly due to the presence of large calculi in the gall-bladder or cystic duct.

DR. A. J. OCHSNER said that in regard to the second case reported, he had, on several occasions, found it difficult to make a definite differential diagnosis between gall-stone colic and appendicular colic, and had consequently made the incision through the edge of the rectus muscle, about one inch lower than he would in a gall-stone operation. In that way he had been able to palpate the gall-bladder and determine the presence or absence of gall-stones. Through the same opening he had also been able to bring up the appendix for inspection; and had in several of these cases found a fecal concretion in it. This incision had been of service when it was impossible to make a definite differential diagnosis, where the stomach symptoms and the colic were not definite enough to positively indicate the presence of one or the other affection. In palpating the gall-bladder one can not always depend on the sense of touch, because in a certain number of cases there is a variety of sand composed of very sharp particles, resembling uric acid crystals, except that they are black. These particles give

rise to just such colics as Dr. Mellish has described. Removing them and draining the gall-bladder for a sufficient length of time to dispose of the inflammation of the lining mucosa, will eventually dispose of the attacks of colic.

MULTIPLE OSTEOMYELITIS AND MULTIPLE PANARTHRITIS.

DR. EDWARD H. OCHSNER reported the case of a boy, 9 years of age, who was referred to him on Nov. 22, 1899, by Dr. Enfield, of Jefferson, Iowa, who had been called in consultation a few days previously.

The family history was negative, with the exception of some indefinite convulsions four years ago, lasting only a few minutes. He had always been well until four weeks before admission, when one morning while at school, he began to feel feverish and had some pain on the inner surface of the right thigh, which seemed to be swollen. He was unable to stand or walk except with considerable pain, and got home with difficulty. On the following day, the temperature rose to 104 F., and he became delirious. The high temperature persisted for two weeks. Three weeks before admission the right elbow became swollen, and one week later the family physician made a small incision into the fluctuating swelling of the thigh and elbow, evacuating considerable seropurulent fluid.

When admitted he was seven pounds under weight; very pale and anemic. The tongue was clean; the bowels were constipated; the temperature was 99.4, the pulse 115, weak and thready; and the heart and lungs were negative. At the left sternocostal junction was a walnut-sized, softish swelling, and in the left axilla another the size of a filbert. The right elbow was markedly swollen and held passively at an angle of 135 degrees; active motion was absent; and the passive, possible about five degrees each way, but beyond this very painful; while rotatory motion was markedly impaired.

The greatest elbow circumference was 26 cm., the middle arm measured 13 cm., and the middle forearm, 11 cm., with points of fluctuation on all sides of the elbow-joint. On the anterior external surface was a pinhead-sized red area where incision was made.

The right leg was held at an angle of 100 degrees; while passively it could be flexed to an angle of 45, and extended to about 135 degrees, and was actively about the same. The thigh was somewhat swollen, and the femur at its middle was markedly thickened. The circumference of the right thigh at the middle was 34 cm., and the left 37 cm.

A probe was introduced into the sinus of the left thigh and passed down to the eroded femur. The incision was made through the skin, then the vastas internus was separated from the rectus by blunt dissection. The lower surface of the femur was found roughened and a portion of the bone slightly eroded. About four ounces of pus was evacuated. The abscess cavity was carefully sponged out and filled with a strong tincture of iodin, which was allowed to remain in about two minutes, then the cavity was packed with iodoform gauze. The secondary sutures were applied and the wound dressed dry.

An incision was made over the olecranon; the triceps, tendon and muscle were separated with blunt dissection from the tendons on the outer surface of the arm. The capsule was then incised and a great quantity of pus evacuated. The ulna was found to be dislocated; and the whole joint cavity was bathed in pus, while the epiphyseal head of the radius was loose in the pus cavity. The joint was carefully sponged dry, treated with strong tincture of iodin and packed with iodin gauze, after the dislocation had beeen carefully reduced. Secondary stitches were taken, and dry dressings used.

The arm was put in an external plaster-of-Paris splint, and placed at a little less than a right angle. A few days later the packing was removed, the secondary stitches tied, and the arm again put in plaster-of-Paris splint. This wound stopped secreting immediately and healed kindly; and the integrity of the joint has been almost completely retained. He has motion in every direction, the flexion is perfect, and the extension nearly so. Internal rotation is perfect, and external quite good, certainly, a much better result than was hoped for at the time of the operation. After a time, the swellings over the sternoclavicular junction, in the left axilla, and of the left knee, subsided under copious wet dressings. The swelling in the left axilla disappeared entirely in the course of a few weeks. After a short, time, however, the abscess in the sternoclavicular junction again increased in size, and on January 15 this had to be opened, when the whole joint was found bathed in pus. It was packed in iodin gauze, and healed kindly. The swelling which previously had been in the synovial sac of the left knee subsided, but on the inner surface of the knee an abscess developed which had to be incised and drained on February 7. Now, all of the wounds have healed except the one over the lower end of the right fmur, where a small sinus remains, leading down to a sequestrum. Except for this, the boy is perfectly well.

The case was presented for the purpose of demonstrating the importance of making an accurate diagnosis. When he was examined a diagnosis was made of pure staphylococcus infection, which was later verified by a bacteriologic examination, and because of this, the elbow was treated just as carefully as if operating on a clean joint. He became convinced long ago that a tubercular joint, or a joint infected with a pure staphylococcus infection, can often be made to heal by primary union if it is not allowed to become infected with other pus micro-organisms or saprophytes.

In tuberculosis, this has long been adopted by most surgeons, at least by those who are successful in treating tubercular joints, and this case helps to prove the contention that if the same care is observed in preventing secondary infection while operating on a panarthritis due to a pure staphylococcus infection, the same ideal results may often be expected.

DR. D. A. K. STEELE said that he had been very much interested in the examination of the elbow of this boy, because of the almost ideal result following the operation for it illustrated so well what can be accomplished by early surgical treatment of these cases. There are few surgeons to-day who believe that when a joint is full of pus it means a loss of that joint. By drainage and proper after-treatment a fairly good result can be obtained. He had known one or two similar elbows that had given equally good results.

DR. A. J. OCHSNER said that he wished to emphasize what had been said regarding the importance of not mixing the microbes, for this holds good no matter whether dealing with staphylococci, tubercle bacilli, or pneumococci. The same is true also of abscesses in bones, due to the presence of typhoid bacilli, a condition which he has been able to demonstrate. He believes that it is important, even if there be a severe infection with one microbe, to keep out all the others.

DR. DANIEL N. EISENDRATH said that he had an experience with mixed or secondary infection that might be of interest. He had been injecting a joint with iodoform glycerin emulsion, and accidentally introduced the bacillus pyocyaneus. He used the Phelps' method of washing out the joint with carbolic acid followed by alcohol and succeeded in completely checking the mixed infection.

DR. JAMES E. MOORE, of Minneapolis, being invited to speak, said that this was one of a class of cases of especial interest and one he liked to have discussed in a surgical society, and also in a medical society, because unfortunately, the average medical man overlooks these cases and usually calls them rheumatism. When a case like this can be operated on and saved, it can readily be understood that the diagnoses should be made at the beginning of the case. Much can be done in the joint of a child, and the younger the child, the better the prognosis. The results may be very good, even after the joint seems to be totally disorganized. When the disease begins outside of the joint, as it often does, it should be prevented from extending into the joint. The question of mixing the germs he regarded as a vital one, bacteriology being indispensable to surgery.

The occurrence of pneumococci in empyema is of considerable importance, as operations for empyema following pneumonia can be performed with the greatest assurance, as recovery will be almost certain. When we have the diplococcus to contend with, the prognosis is invariably good, but when, on the other hand, there is a streptococcus or even the tubercle bacillus to deal with, the prognosis is not so good. It always makes a difference what kind of germs there is for no matter how badly infected the wound may be in the start no more germs shall be allowed to be introduced.

SUTURE OF THE MUSCULO-SPIRAL NERVE.

DR. D. A. K. STEELE presented the case of a young man, who, some years ago, while riding his bicycle, collided with the point of a buggy shaft, which struck him on the left arm over the musculospiral nerve, causing a slight laceration of the skin. He went to work the next day, as usual, but found that the arm was helpless. His employer sent him to a physician who, recognizing an injury of the nerve, suggested nerve suture. Another doctor used electricity for about a month with little benefit. Then the young man went back to the first doctor for a while and then suspended treatment for a month or six weeks, finally coming to him. At this time there was a wrist-drop and absolute loss of function of the parts supplied by the musculospiral nerve. On careful examination, he concluded that there had been a lesion of the nerve at the point where the buggy shaft struck the arm. There was absolutely no response to electrical tests. He advised an operation, and performed it three months after the injury. An incision was made directly over the nerve and he found that the ends were separated about three-quarters of an inch, and the space was filled in with connective tissue. An ordinary resection was made, cutting off about one-half inch and securing an end-to-end approximation. The nerve was united with fine interrupted silk sutures, passing through from side to side and from above, downward. The wound was closed up and the arm put in a cast. Primary union followed within a very few days; but there was no restoration of function, the wrist-drop continued, and at the end of two months the operation seemed to have done no good.

At the time of section, a little difference in the color and appearance of the nerve was noticed, but it did not seeem wise to remove any more than one-half inch because of the difficulty of approximating the nerve ends. At the close of two months, a small exceedingly sensitive tumor appeared at the point of operation. A second operation was advised and what proved to be a fibroneuroma, involving the entire thickness of the nerve at the point of the suture was found, the suture being in this mass. The tumor was dissected out and carefully removed, taking also three-quarters of an inch of the continuity of the nerve. Instead of making a square section, a step or stair section above and below was made. By drawing the nerve well up and the upper portion down these mortised parts were laid together and sutures of fine silk were again used. This second operation was followed by prompt union and very slow improvement, but at the end of two months, nothing seemed to have been gained, and at the end of three months, there was but little more improvement. The literature of nerve suture showed that the restoration of function was very slow, so the young man was advised to be patient as nothing could be gained by further operation. He used massage and encouraged the use of his hand, and at the end of four or five months noticed that the drop-wrist was not so bad. The numbness then disappeared somewhat and at the end of six months there was a decided improvement. At the end of eight months, the condition was practically normal, though there was a slight hyperesthesia over the field of operation, and at the point of union, an exceedingly sensitive place, pressure upon which made him wince.

The case was presented because good results following crushing injury of the musculospiral nerve are not very common, and because the first operation was followed by a fibroneuroma, and the restoration of function did not take place until seven months after the second operation, showing that time is an important element in the restoration of function in divided nerves which have been sutured.

DR. DANIEL N. EISENDRATH, who was consulted first by this patient, said that he wished to state some interesting clinical points about this case. When first brought to him, twenty-four hours after the injury, the young man simply had an abrasion, without any laceration of the skin, and a wrist-drop. He was examined carefully for areas of anesthesia corresponding to the distribution of the radial nerve, but none were found. He then referred him to a neurologist, who believed that the nerve was contused but not divided. The areas of anesthesia gradually developed, and a diagnosis of actual severance of the nerve was made two months after the injury. Shortly after the first operation, a tumor appeared at the site of the suture which, removed at second operation, proved to be a fibroneuroma with about equal preponderance of nerve and connective-tissue elements. Whether this was in part due to the irritation of the silk was a question, although it seemed to be. The interesting point about this tumor and the lack of success in the first operation was that the nerve was contused above and below the point of resection. This is a frequent reason for lack of success in such operations. Macroscopically, the nerve seemed to be perfect, but microscopically there was seen to be considerable degeneration above and below the injury. The main point in the successful outcome seems to be to distinguish between the amount of superficial and deep injury.

DR. L. L. MCARTHUR said that at the last meeting he had the pleasure of presenting to the Society a case of suture of the median nerve in which union had occurred and sensibility had been restored within two weeks. He has now planned an operation for resuture of the same nerve in another patient, who, eighteen months ago, received an incised wound of the middle portion of the forearm. He was taken to the County Hospital and the nerve sutured. Sensation returned within three months. It is now eighteen months since the injury, and a little over a year since the suture was made; the man has been unable to follow his trade, that of a tailor, not because of a total loss of sensibility in the fingers, but because of a sense of pain, numbness and tingling. He desires further relief. On examination a very pronounced neurofibroma at the seat of injury was found and he now proposes the removal of that neuroma, and the resuturing of the nerve, though it is possible that no better result may be attained. He asked whether any present had had any experience in the removal of tumors developed in the course of a sutured nerve, or a tumor enucleated without severing the entire nerve, and if such an operation would be feasible and possible. He mentioned a case of double wrist-drop which occurred in one of the tally-ho horn blowers during the World's Fair. While crossing the car-tracks, he was thrown out of his rumble seat, and fell on the back of his head, with his arms thrown backward. A double wrist-drop immediately developed. There seemed to be no injury of the arms, but it was found that he had sustained a traumatism at the level of the fourth and fifth cervical vertebræ. There was tenderness, but no deformity and it seemed that the roots of the fifth cervical nerve had been injured on both sides, causing the double wrist-drop.

DR. E. J. MELLISH said that the question in his mind was whether the tenderness at the point of suture might not be due to the fact that silk was used instead of some absorbent suture material.

DR. JAMES E. MOORE said that in reference to the question asked by Dr. McArthur, he had an interesting case in point. A man of splendid physique had been complaining for a long time of excruciating pains in the region of the perineal nerve. He had been operated on, but without relief, and when he saw him some six months afterward he could distinctly feel a tumor as big as the index finger. He took the precaution to mark the exact location before making the operation, so that he would have no difficulty in locating it. He found he could save a few fibers of the nerve on the inner side, the outer three-fourths being completely destroyed. The man made a complete recovery, and there was not even a temporary loss of motion or function. He had also a case of rupture of the median nerve. The patient came under his care last winter, with a compound dislocation forward of the lower end of the humerus, and a simple fracture of the radius and a multiple compound comminuted fracture of the humerus. After getting the patient under the anesthetic, he concluded to make an effort to save the arm, as the circulation was intact. He could not tell anything about the nerve, but subsequent events showed that it was ruptured. He has now a movable joint, and can pronate and supinate, but has lost the median nerve, which he proposes attempting to restore. The biceps was torn in shreds, making it difficult to restore the function of the nerve on account of the cicatricial tissue around it.

DR. JOHN E. OWENS spoke of being associated with Dr. Gunn in a case of painful tumor of a nerve of the arm, he thought of the musculospiral. Dr. Gunn exposed the nerve at the point of the tumor, separated the nerve fibers and peeled out the mass just as he would an ordinary fatty tumor. The patient recovered perfectly.

DR. STEELE, in closing the discussion, said that the question asked by Dr. McArthur had already been answered. In reference to some of the questions of Dr. Bevan, he fully agreed with him that where there is only a contusion of the nerve the patient should have a chance for several months, as he would probably recover without any operation. In a case of this kind, however, where the patient was given a chance and no improvement resulted, it seemed that sufficient time had elapsed for surgery to step in, and the condition found at the time of the operation proved that an operation was indicated. There was not a contusion, but a complete severing of the nerve. The upper end was bulbous and the lower end was small and separated for about one-half inch. Very little evidence was given externally of the severity of the injury, as there was only an abrasion. With reference to the cases of paralysis following fractures with injury of the musculospiral nerve, he said that many of them are due to the pinching of the nerve by the formation of callus, and the embedding of the nerve in the mass. As this contracts or ossifies it gives rise to severe pain, which must be relieved. These cases will probably improve, as the callus is absorbed, but if not, or if the pain is extremely severe, the callus must be chiseled away. The tenderness or hyperesthesia now present may be due to the fine silk suture used, and it is quite possible that it was responsible for the first neuroma, but we must remember that in suturing a nerve or tendon, a material with considerable tensile strength must be used.

Proceedings Wisconsin State Medical Society.

Fifty-Fourth Annual Meeting, Milwaukee, June 20-22, 1900.

UNUSUAL MANIFESTATIONS OF MALIGNANT DISEASE.

Dr. C. W. Oviat read a paper having this title. It was discussed by Dr. G. A. Kletzsch and Dr. A. J. Burgess, of Milwaukee. The latter deprecated the importance given to age as a factor in diagnosis. It usually ought to be excluded, not only in the diagnosis of the disease in question, but generally, as it is misleading and a stumbling-block.

CANCER OF THE UTERUS.

DR. G. A. KLETZSCH read a paper on this subject. Dr. Herman Reineking, of Sheboygan, in discussing the pathologic side of the question, stated that in his opinion the similarity of the proliferation of cancer to that of syphilis and tuberculosis indicated a bacterial origin of the disease.

DR. A. J. PULS, of Milwaukee, discussed the subject of surgical treatment of cancer of the uterus. The failure of a vast majority of operations for cancer of the uterus to effect a cure, he said, was due to the fact that the cancerous infiltration extended much more deeply than was commonly believed, and was really found in what is supposed to be healthy tissue. He recommended the new operation of Dr. Kelly, described in the issue of the JOURNAL of May 19, 1900.

DR. J. W. COON, of the health department of Milwaukee, gave figures showing that cancer in general, including cancer of the uterus, is increasing in the United States with alarming rapidity.

DR. EMIL RIES, of Chicago, by invitation, closed the discussion. He opposed the Kelly operation described by Dr. Puls, for the reason that it would result in the infection of healthy tissue during and by the operation, and recommended the operation which he had himself first suggested, but which was first performed by Dr. Clark, and which is known in the United States as the Clark operation, and in Europe as the Clark or Ries operation, this operation having for its object the removal of all structures that could possibly be affected, and being therefore much more successful than other operations. Dr. Ries claimed that the cancerous tissue is much more extensive in its infiltrations than is generally thought. The reason for the general belief is that frequent examinations with the microscope do not show the cancerous structure; but if hundreds and hundreds of sections are made and examined, the cancerous structure may be found, and if one of these sections indicates the presence of the disease, that, of course, determines that the disease has extended as far as the tissue in question.

A PLEA FOR THE UNBORN.

DR. EDWARD EVANS, of LaCrosse, in his paper on this subject, attacked abortionists and deplored the prevalence of the crime. He stated that our birth-rate is only 2 per cent. higher than that of France.

MR. JOHN T. KELLEY, of Milwaukee, discussed the question from a legal standpoint. In most of the states the degree of the crime does not depend on the time of performing the abortion.

DR. G. J. KAUMHEIMER, of Milwaukee, scored the daily press, which, almost without exception, shamelessly flaunts the advertisements of professional abortionists in the face of the community. The consensus of opinion was that the remedy for the evil lay in the direction of moral education rather than to obtain nearly impossible convictions under the law.

SUPPURATIVE OTITIS MEDIA.

DR. H. V. WÜRDEMANN, of Milwaukee, read a paper on suppurative otitis media in children. He protested against the culpable ignorance of people in general in not recognizing the serious importance to life of prompt treatment of cases of inflammation within the ear. The diagnosis of otitis media is so easy, and the treatment is so simple, that every physician should be as expert in its diagnosis and treatment as the specialist. Paracentesis is usually advisable.

INFANT FEEDING.

DR. L. BOORSE, Milwaukee, read a paper on the present status of substitute infant feeding, with special reference to the percentage method, and home modification of cow's milk. Pasteurized milk, when fresh and properly protected from contamination, remains practically sterile for a sufficient length of time to render it safe for infant feeding. The advantages of the percentage method over former methods now in general use are generally recognized and earnestly recommended. The best results in substitute feeding are obtained in asepsis and adaptation to the digestive powers of the individual.

DR. J. NOER, of Stoughton, read a paper on substitute infant feeding in general practice. He said that the problem was simple until 1890. Proprietary infant foods are to be condemned as absolutely unreliable and inadequate in their constituents. They should not be used except as a last resort or a temporary expedient when good dairy milk can not be obtained or tolerated. This, however, does not apply to some of the latest German products. Clinically tested these milks have all failed. It is difficult to explain why scientific laboratory milk mixtures are unsatisfactory substitutes, leading to malnutrition, etc. Laboratory milk in the hands of experts is a success in 5 per cent., a partial success in 9 per cent., and a total failure in 65 per cent. of all cases. It does not solve the problem of substitute infant feeding. The filth brought in milk into our homes is terrible to contemplate. It is estimated that 300 pounds of cows' excrement are furnished to New Yorkers each morning. An examination of ordinary, uninspected milk as sold, shows the presence of bacteria varying in numbers from 100,000 to 30,000,000 per cubic centimeter, as compared with an average of 1,000,000 bacteria per cubic centimenter found in the average specimen of sewage. It is to be considered that many of the bacteria found in milk are non-pathogenic. The problem is to obtain pure, uncontaminated dairy milk for infant feeding. This problem seems to be solved by the Copenhagen plan of supervision and inspection.

DR. H. B. SEARS, of Beaver Dam, in discussing the subject, called attention to the fact that the bacteria present are almost entirely in the cream, and therefore that cream should never be used without sterilization. Sterilization, however, does not materially improve the toxins and filth. Some authorities hold that if the milk be deprived of its animal heat immediately and reduced to a temperature of about 40 degrees, it will be comparatively germ-free.

SCARLET FEVER.

DR. F. D. MILLER, of Milwaukee, read a paper on the subject of scarlet fever. He gave a complete history of the disease. Atypical cases occur which are sometimes difficult of diagnosis.

DR. J. J. MCGOVERN, of Milwaukee, said that the disease he thought was not transmitted by air nor by the scale of desquamation. Certain cities and localities are apparently immune. The disease seldom occurs in the South. It rarely occurs in Paris, but is quite common in Berlin.

DR. F. A. KLEINHANS, of Milwaukee, said that it was certain that scarlet fever could recur in the same patient; also that the cause of the disease was unknown.

DR. H. B. SEARS, of Beaver Dam, advised the use of the bath to reduce temperature.

DR. KAUMHEIMER advised that the urine be examined frequently for a period of at least six weeks after the patient is apparently well, in order to guard against an attack of nephritis. He said that he knew of recurrent cases where the diagnosis was undoubted.

DR. JUERGENS, of Fredonia, advised the use of the pack where a bath-tub was not available.

CHLORETONE.

DR. W. B. HILL, of Milwaukee, read a paper on chloretone, a new hypnotic. He said that it was the ideal local anesthetic, being germicidal and antiseptic and having no after effects. It can be used with perfect safety even in very large doses and is never contraindicated.

The paper was freely discussed and the weight of opinion was most favorable to the use of the drug both as a general and as a local anesthetic; and especial reference was made to its use in cases of nervous insomnia.

ANNUAL ADDRESS; CARDIAC AND CIRCULATORY DISEASES.

The annual address in medicine was delivered by Prof. Alfred Stengel, of Philadelphia. The speaker paid especial attention to cardiac and circulatory diseases and laid stress on the importance of close attention to the symptoms of these disorders. This class of diseases is increasing, but the increase is probably due to the increased length of life lately obtaining. Cases of myocardiac disease were described, and the necessity of careful study of that condition emphasized. Any case of heart irregularity in a man past 40 should not be regarded as functional unless it is clearly shown to be such, but myocarditis should be suspected.

RHEUMATOID ARTHRITIS.

DR. W. H. NEILSON, in his paper on rheumatoid arthritis, said that the origin of the disease is probably infectious, and that it must be carefully differentiated from rheumatism. The prognosis is not good for cure, but is good for amelioration.

DR. W. H. WASHBURN, of Milwaukee, in discussing the paper, showed that the origin of the disease was bacterial and not nervous. The damage that the disease has done can not be repaired, but the disease can be checked.

DR. W. G. KEMPER, Manitowoc, said that the disease was obstinate to treatment, but described proper course of treatment viz,, change of climate if necessary, hygienic surroundings, use of eliminatives and drugs. Treatment must be long continued. The fact that patients suffering from this disease are not subject to tuberculosis would suggest serum treatment.

SURGICAL TREATMENT OF EMPYEMA.

DR. W. A. BATCHELOR, Milwaukee, presented a paper on the surgical treatment of empyema and purulent pericarditis. He said that incision and drainage are the proper means of treatment. He described Hippocrates' treatment, and showed its remarkable similarity to the modern method. He advised rib resection, but discouraged irrigation.

DR. F. SHIMONEK, Milwaukee, held that early resection even in children is almost always advisable, and stated that secondary resection is a very difficult operation.

DR. HERMAN REINEKING, Sheboygan, spoke in favor of irrigation. There was quite a difference of opinion regarding the advisability of universal early resection.

RADICAL CURE OF HERNIA.

DR. H. A. SIFTON, Milwaukee, read a paper on the subject of the radical cure of hernia. He said that catgut and kangaroo tendon sutures, although not ideal, are better than non-absorbable sutures. The operation is one of the most frequent of major operations and the results are most gratifying.

ANNUAL ADDRESS ON SURGERY.

PROF. MAURICE R. RICHARDSON, Boston, then read the annual address in surgery, on the subject of conservatism in surgery. In regard to appendicitis he said that the first pain experienced was frequently caused by rupture. In the treatment of acute appendicitis radicalism shold be employed at the earliest possible period. The appendix should be removed because it is a useless organ, and there is everything to gain and nothing to lose by its removal. Gall-stones and tumors should also be attacked at the earliest possible moment. Early recognition and early operation should be our watchword. In all these diseases the fatality is due to the condition and not to the operation. Surgery of the ovary is, however, pre-eminently a field for conservatism unless malignancy is present.

DR. F. SHIMONEK, Milwaukee, then read a paper on primary branchiogenic carcinoma.

DR C. G. WILSON, Milwaukee, read a paper on Addison's disease.

DR. W. G. KEMPER, Manitowoc, read a paper on the essentials of life and longevity. He said: Many of the theories of medicine to-day are preposterous. In rummaging for panaceas we overlook the real root of our complications. The simpler and more primitive the civilization or condition of life, the healthier the people. Inherited morbid proclivities may be overcome by long-continued observations of hygienic principles. Every person should drink at least four pints of water daily. "Live on a shilling a day and earn it." Following these rules disease will ultimately be eliminated and men will sink into their final slumber in old age painlessly.

DR. BYRON ROBINSON, Chicago, spoke regarding 250 vaginal hysterectomies done either by himself or under his supervision. He considers the vaginal route preferable in all cases to the abdominal route. Hernia does not follow the vaginal operation; the death-rate is only 4 per cent., and this will be decreased.

DR. F. H. EDSALL, Madison, read a paper on the subject of the relationship between ocular affections and systemic diseases.

DR. C. ZIMMERMANN, Milwaukee, read a paper on cholesteatoma of the middle ear, and its radical treatment. He said that the disease might continue for many years without disturbing the general health of the patient. He described operation, but claimed that this is only the commencement of the treatment, and that the disease has a great tendency to relapse.

THE COUNTY ASYLUMS OF WISCONSIN.

DR. RICHARD DEWEY, Wauwatosa, read a paper on the county asylums of Wisconsin from a medical standpoint. Dr. Dewey criticized the county system, while admitting that its modification as found in Wisconsin was the best example of that method of caring for the insane. The county asylums are as a rule run too cheaply. Proper medical attention is not given to patients in all cases, for the reason that most of the superintendents of county asylums are not physicians.

DR. W. A. GORDON, Winnebago, said that it was not quite correct to say that Wisconsin had the pure county asylum plan in operation, for the reason that all such asylums are under state control. One great advantage of county asylums over state asylums is derived from their publicity. Friends can much more readily, frequently and at less expense visit the patients than in the case of state institutions.

DR. A. J. BURGESS, Milwaukee, condemned the county system on the ground that the patients did not receive proper medical treatment, proper care or sufficient food.

DR. G. A. KLETZSCH, Milwaukee, called attention to the excellence of the Milwaukee County asylums.

THE USE AND ABUSE OF THE GALVANOCAUTERY.

DR. C. D. CONKEY, Superior, read a paper on "The Use and Abuse of the Galvanocautery in Nasal Surgery." The speaker

said that the objections raised against the cautery are founded upon its improper use. As a matter of routine practice it should not be used behind the roof of the nose, the middle turbinated, the vault of the pharynx, the soft palate and the uvula, and upon the septum, only when much hypertrophied or deeply congested, and then the burn should be neither deep nor extensive. Upon the lower turbinated it may be used to great advantage, confining the applications as much as possible to thrusts, and avoiding large electrodes. In the throat it may be used to the greatest advantage, upon the tonsils, pharyngeal hypertrophies and follicles, and at the base of the tongue to destroy dilated blood-vessels and hypertrophied glandular tissue, but using it so as to avoid contact with the epiglottis.

PRESIDENT'S ANNUAL ADDRESS.

DR. W. T. SARLES, Sparta, delivered the president's annual address. He dwelt upon the fact that this is the day of the specialist. He thought the society should be divided into sections; that there should be two grand divisions, one of surgery and one of medicine, which would listen to papers by great specialists. He was convinced that the physician should exercise his duties of citizenship more extensively than he does. Not until we have more of these men in the halls of Congress will we obtain a national health commission and corresponding laws. The chief aim of the medical practitioner is to do good.

The following resolution was adopted:

The president shall annually nominate a committee of one on national legislation, who shall act with the permanent committee on legislation of the AMERICAN MEDICAL ASSOCIATION and who shall meet with said committee of the ASSOCIATION once each year in Washington, D. C.

Two hundred dollars was appropriated for the use of the legislative committee.

A committee of five is to be appointed to work out the problem of having a pathologic exhibit which can be used for the AMERICAN MEDICAL ASSOCIATION meeting.

The following resolution was adopted unanimously:

That the constitution be amended to read that the annual meeting shall be in May or June, subject to the call of the president, secretary and executive board.

Dr. J. F. Pritchard, Manitowoc, was elected president; Dr. H. V. Würdemann, Milwaukee, first vice-president; Dr. Edward Evans, La Crosse, second vice-president, and Dr. George M. Steele, censor.

Waukesha was chosen as the place of meeting for the next convention.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, June 21.

1 Realism in Medicine. (Concluded.) A. T. Cabot.
2 *Closing Statement for Remonstrants to the Massachusetts House Bill No. 917, entitled "An Act for the Future Prevention of Cruelty to Animals." Before Joint Committee on Probate and Insolvency. (Concluded.) Harold C. Ernst.
3 *Law of Dying Declarations. M. J. Sughrue.
4 Case of Extra-uterine Pregnancy. Frank Holyoke.
5 *Marks Produced by Pistol Shots. G. De N. Hough.

New York Medical Journal, June 23.

6 *Inflammation of Meckel's Diverticulum with Resulting Gangrene of Intestine Simulating Appendicitis. W. P. Nicolson.
7 Clinical and Pathologic Observations on Some Early Forms of Epithelioma of the Skin. (Concluded.) J. A. Fordyce.
8 Rampancy, the Fervor of the Forehead. Wallace Wood.
9 *Perimetric Diagnosis. (Concluded.) J. W. Sherer.
10 *Advantages of Pneumatic Cabinet or Differentiator in Treatment of Phthisis Pulmonalis. J. Carlisle De Vries.
11 *Value of Tuberculin Test in Diagnosis of Pulmonary Tuberculosis. J. M. Anders.
12 Iodin-Bearing Drugs in Treatment of Chronic Purulent Otorrhea. Carle Lee Felt.

Medical News (N. Y.), June 23.

13 *Protest Against Some of the Evils in the Profession of Medicine. J. A. Witherspoon.
14 *Some Points in Management of Obstetric Cases in Private Practice. Joseph B. Cooke.

Philadelphia Medical Journal, June 23.

15 Angina Pectoris. (Continued.) Clifford Allbutt.
16 *Scarlatina: Some Further Experiments. Willim J. Class.
17 *Contribution to Study of Exophthalmic Goiter. (Concluded.) Alfred Gordon.

Cincinnati Lancet-Clinic, June 23.

18 *Remarks on Some Unusual Types of Gastrointestinal Disorders. Henry W. Bettman.
19 Ophthalmic Memoranda. David DeBeck.

Medical Record (N. Y.), June 23.

20 Memorial Address upon Dr. Fessenden Nott Otis. T. Gaillard Thomas.
21 *New Plan for Washing the Bladder, with Description of Apparatus. Wm. F. Fluhrer.
22 *Ceruminous and Epithelial Impactions in External Auditory Canal. Samuel Kohn.
23 *Dampness of Soil as Factor in Production of Human Tuberculosis. Richard Cole Newton.

Medical Review (St. Louis, Mo.), June 16-23.

24 *Gastric Hemorrhage. Wm. L. Rodman.
25 Remarks upon Dr. J. W. Smith's Case of Hodgkin's Disease. J. K. Bauduy.
26 Treatment of Pneumonias of Infancy and Childhood. Isaac A. Abt.
27 *Protest Against Some of the Evils in the Profession of Medicine. J. A. Witherspoon.

American Practitioner and News (Louisville, Ky.), June 1.

28 Epoch-Making Discoveries in Medicine. H. A. Cottell.
29 Acute Articular Rheumatism in Children. Frank C. Simpson.

Virginia Medical Semi-Monthly (Richmond), May 25, June 8.

30 *Colonial Treatment of Epilepsy. Daniel R. Brower.
31 *A Single Impression Made upon the Mind of a Non-Pregnant Woman. P. B. McCutchon.
32 Age and Sex as Factors in Intestinal Obstruction. C. N. Brown.
33 *If Cause is Removed, the Cure Will Follow. Treatment of Tuberculosis of the Lungs. W. J. Chenoweth.
34 Cerebral Gout. A. G. Brown, Jr.
35 *Local Paralysis Due to Overdose of Camphor. T. B. Greenley.
36 Nephritis Conventionally Considered. U. V. Williams.
37* Physician the Nation's Guardian. J. Cheston King.
38 Some Mooted Questions in Proctology. A. B. Cooke.
39 Mucous Disease. P. F. Barbour.
40 Importance of Eye Symptoms in Diagnosis of General Diseases. A. D. McConachie.
41 Prolapsed Umbilical Cord. J. M. Passig.
42 Evolution of the Saw Palmetto. J. C. Le Hardy.
43 Treatment of Ulcers of Legs. S. S. Halderman.
44 Treatment of Syphilis. H. Plummer.
45 Preventive Medicine and Higher Medical Education. E. B. Montgomery.
46 Should Physicians Supply the Medicines They Prescribe? D. S. Morrill.

Medical Times and Register (Philadelphia), June.

47 Treatment of Hernia by Buried, Continuous Silver Wire Suturing. Albert H. Tuttle.
48 Review of Potence and Imoptence. Physiology, Pathology and Other Embarrassments of Procreative Powers. Review of Aphrodisiacs of Past and Present. Sexual Hygiene in Married and Single Life, etc. "Fecondite" (Zola) and "Kreutzer Sonata (Tolstoi). (Continued.) John J. Caldwell.

The Post-Graduate (N. Y.), June.

49 Early Treatment of Acute Aural Disease. D. B. St. J. Roosa.
50 Acute Otitis Media Supervening on Otitis Media Purulenta Chronica. William O. Moore.
51 Atrophic Rhinitis. H. Beaman Douglass.
52 Management of Acute Suppurative Otitis Media. Wendell C. Phillips.
53 Notes from Clinics. Drs. Roosa and Moore.
54 Inflammatory Conditions in Middle Turbinated Region. Clarence C. Rice.
55 Two Interesting Cases of Laryngeal Growth. Clarence C. Rice.
56 An Extreme Case of Lateral Pharyngitis. Clarence C. Rice.
57 A Few of the Laryngeal Lesions Which Are Only Seen in Singers, Actors, and Public Speakers. Clarence C. Rice.
58 Additional Laryngeal Disturbances Which Are Only Seen in Singers and Public Speakers. Clarence C. Rice.
59 Large Fibroma Attached to Vault of Pharynx, Contracted by Galvano-Cautery Puncture and Removed by Cautery Loop. Clarence C. Rice.
60 Two Interesting Nasal Conditions Causing Nose Bleed. Clarence C. Rice.
61 Rare Condition of Congenital Closure of Anterior Nares. Clarence C. Rice.
62 Surgical Treatment of Both Enlarged and Diseased Tonsils in Children and in Adults. Clarence C. Rice.
63 Use of Tonsil Knife. Beaman Douglass.
64 Unusual and Distressing Symptom of Antrum Disease with Reports of Three Cases. Thomas J. Harris.
65 Perichrondritis of Arytenoids in Its Acute Form. Frank C. Combes.

American Journal of Obstetrics (N.Y.), June.

66 *Comments on Toxemia of Pregnancy and on Operative Treatment of Uterine Displacements. Egbert H. Grandin.
67 *Carcinoma of Recto-Vaginal Septum. W. R. Pryor.
68 *Treatment of Full-Term Ectopic Gestation. Edwin B. Cragin.
69 Combined Nephrectomy and Ureterectomy. E. E. Montgomery.
70 Diphtheria Deaths and Antitoxin Statistics. Adolph Rupp.
71 *Observations on Pryor's Method of Removing Fibroid Uterus: With Report of Ten Successful Cases. A. Lapthorn Smith.
72 *Frequency and Significance of Infarcts of Placenta, Based upon Microscopic Examination of Five Hundred Consecutive Placentæ. J. W. Williams.
73 Review of Five Years' Experience with Pelvic Diseases at Vanderbilt Clinic. William S. Stone.
74 Improved Vesical Speculum. Howard A. Kelly.
75 *Treatment of Persistent Fecal Fistulæ. I. S. Stone.

Peoria Medical Journal, June.

76 Differential Diagnosis of Acute Miliary Tuberculosis and Typhoid Fever in Children. J. S. Miller.

Southern California Practitioner, May.

77 Some Physiologic Aspects of Practice of Modern Surgery. Norman Bridge.
78 Needed Reforms in Kindergarten Work. H. Bert Ellis.
79 Appropriate Cases for Vasectomy. W. W. Hitchcock.
80 Intestinal Antisepsis by Means of Chlorin Water in Typhoid Fever. O. D. Fitzgerald.
81 Case of Colocynth Poisoning. J. Lee Hagadorn.

Buffalo Medical Journal, June.

82 *Treatment of Epilepsy in Its Incipiency. Wm. P. Spratling.
83 Establishment of First Free Municipal Bath-House at Buffalo, N. Y. Ernest Wende.
84 Erysipelas. A. A. Young.
85 Curettage of Male Bladder for Chronic Cystitis. Nathan W. Soble.
86 Personal Experience with Fracture of Hip. George W. Greene.
87 Some Manifestations of Lithemia in Young. Maud J. Frye.

Woman's Medical Journal (Toledo, Ohio), June.

88 Uterus: Some Comments on Its Anatomy and Physiologic Reflexes. Corinne B. Eckley.
89 Puerperal Insanity. Fannie C. Hutchins.
90 Sydenham's Chorea. Emma C. Hackett.

Journal of Nervous and Mental Disease (N. Y.), June.

91 *Contribution to Study of Plantar Reflex, Based upon Seven Hundred Examinations Made with Special Reference to the Babinski Phenomenon. G. L. Walton and W. E. Paul.
92 *Two Cases of Primary Neurotic Atrophy Bearing a Resemblance to Multiple Neuritis. F. X. Dercum.
93 Digest of Recent Work on Epilepsy. (To Be Continued.) L. Pierce Clark.

American Medical Compend (Toledo, Ohio), June.

94 Address to Graduating Class of Toledo Medical College. W. A. Dickey.
95 Microscope in Medicine. D. E. Haag.
96 Abscess of Lung. J. Fred Clark.

Archives of Pediatrics (N. Y.), June.

97 Gastric Ulcer. E. J. Greenfield.
98 *Clinical Observations upon Operative Treatment of Tuberculous Peritonitis. Augustus Chaillé.
99 Pancreatic Digestion of Casein. B. K. Rachford.
100 Case of Child Cretin Where the Effects of Thyroid Treatment upon Bodily and Mental Condition Were Remarkably Rapid and Complete. H. Oliphant Nicholson.
101 Acute Glandular Fever. W. F. Boggess.
102 Remarks upon Treatment of Whooping-cough. Francis Huber.

Interstate Medical Journal (St. Louis, Mo.), June.

103 *A Single Impression Made upon the Mind of a Non-Pregnant Woman Causes Defects in Her Eight Subsequent (not successive) Pregnancies, Extending Over a Period of Fifteen Years—Eight Albinos, Four Well Developed, Four Anencephalous, Four Breech Presentations. P. B. McCutcheon.
104 Facts of Inheritance. (Continued.) J. Arthur Thompson.
105 Smallpox: Its Prevention and Treatment. R. S. Kelso.
106 Analytic Diagnosis of Abdominal Tumors. (Continued.) Byron Robinson.
107 Compound Adjustable Support Versus Plaster Jacket. E. P. Banning.
108 Treatment of Lithemia. Frank M. Floyd.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), June.

109 *The Gonococcus: Report of Successful Cultivations from Cases of Arthritis, Subcutaneous Abscess, Acute and Chronic Cystitis, Pyonephroses, and Peritonitis. Hugh H. Young.
110 *Report of Two Cases of Persistent Exfoliation of Lips. Henry W. Stelwagon.

Dominion Medical Monthly (Toronto), May.

111 Report of Case of Addison's Disease. R. J. Dwyer.
112 Something of Advantage to Physician from Business Standpoint. Dr. Graham.
113 How to Secure Pure Drugs at Less Cost. J. W. Shaw.
114 *Appreciation of Kelly's Method of Removing Fibroid Uterus by Abdomen. A. Lapthorn Smith.

Obstetrics (N.Y.), June.

115 *Anatomy of Reflexa in Tubal Pregnancy. Alexander Couvelaire.
116 *Causes and Treatment of Displacements of the Uterus. Louis Frank.

Colorado Medical Journal, May.

117 Southern Colorado: Its Climate. Therapeutic Value in Diseases Other Than Phthisis Pulmonalis. H. Foster Hazlett.
118 Infant Feeding. H. B. Whitney.
119 Injuries of Eye from Accidents in Mine. (To Be Continued.) Melville Black.
120 Address to Graduating Classes of Medical and Dental Departments of University of Denver. H. G. Wetherill.

Iowa Medical Journal, May.

121 Address Before Iowa State Med. Society. C. S. James.
122 Address Before Iowa State Med. Society. R. E. Coniff.
123 Tuberculosis Question Financially Considered. J. W. Kime.
124 "Prophylaxis." A. Crawford.

Medical Review of Reviews (N. Y.). May 25.

125 Superheated Dry Air in Treatment of Rheumatic and Allied Affections. Thomas E. Satterthwaite.

St. Paul Medical Journal, June

126 *Treatment of Inoperable Cancer. William B. Coley.
127 Mirror-writing, Inverted Vision and Allied Ocular Defects. Arthur Sweeney.
128 Some Phases of Syphilis. R. Graham.
129 Rupture of Male Urethra. C. P. Thomas.
130 Injury to Cervical Spine. C. F. Culver and Haldor Sneve.

The Sanitarian (Brooklyn, N. Y.), June.

131 Suppression of Epidemics. Walter Wyman.
132 Review of Modern Treatment of Pulmonary Tuberculosis. M. J. Brooks.
133 Stamina: With Reference to Consumption of Fat Food for Its Maintenance and as a Preventive of Tuberculosis. A. N. Bell.

Journal of the Boston Society of Medical Sciences, May.

134 *Studies in Mechanism of Agglutination. Harold C. Ernst and W. H. Robey, Jr.
135 *Pathology of Azoturia. W. R. Brinckerhoff.
136 *A Possible Cause of Azoturia. A. W. Balch.
137 *Physiologic Effects and Nature of Extracts of Sympathetic Ganglia. Allen Cleghorn.
138 Movements of Normal Spine in Their Relation to Scoliosis. R. W. Lovett.
139 Actinomycosis of Udder of Cow. Harold C. Ernst.
140 Plastic Restoration of Orb nit dlLadsl Fn..PlGQgPJ taota

Ophthalmic Record (Chicago), June.

140 Plastic Restoration of Orbit and Lids for Prothesis—Extensive Traumatic Ectropion and Cicatricial Contraction of Orbital Tisues Cured by Wolff and Thiersch Grafts from Skin of Arm and Mucous Membrane of Lip. H. V. Wurdemann.
141 Case of Microphakia. H. O. Reik.
142 *Cystoid Cicatrization Following Cataract Extraction, with Periodical Escape of Aqueous; Report of Case. Albert E. Bulson, Jr.
143 *Combination Sponge-Graft and Artificial Globe Implantation After Enucleation of Eyeball. George F. Suker.
144 Case of Foreign Body Passing Directly Through Eye and Lodging in Fatty Tissue in Posterior Portion of Orbit—Dislocation of Lens—Recovery. Frank Allport.
145 Report of Cases. 1. Interstitial Keratitis in Acquired Syphilis. 2. Lead Deposits in Cornea, with Verification of Micro-Chemical Tests. 3. Cilia in Punctn Lachrymalia. E. C. Ellett.
146 Clinical and Histologic Study of Case of Melanotic Sarcoma of Choroid, Presenting Symptoms of Secondary Glaucoma. Charles A. Oliver.
147 Case of Foreign Body in Lens—Cataract—Iridectomy—Removal of Steel with Magnet—Removal of Lens—Intraocular Hemorrhages—Evacuation of Hemorrhages—Good Result. Frank Allport.
148 *Diagnostic Point in Third Nerve Paralysis. Charles A. Wishart.
149 Upon Relationship of Certain Catarrhal and Purulent Inflammations of Conjunctiva to Urethritis and Arthritis. H. McI. Morton.
150 Treatment of Diarrhea. John V. Shoemaker.

Medical Bulletin (Philadelphia), June,

151 A Most Valuable Preparation of Mercury. Charles M. Hickey.
152 So-Called Pyorrhea Alveolaris—Dentifrices—Experiments with Hydrogen Dioxid. Ephraim Cutter.

Hot Springs Medical Journal, May.

153 Vesico-Rectal Anastomosis. Jacob Frank.

Canada Lancet (Toronto), June.

154 General Cystic Degeneration of Kidney. H. C. Parsons.
155 Case of Concealed Hydrocephalus. Theo. Coleman.
156 Cerebellar Tumor with Double Optic Neuritis. J. T. Duncan.

Seaboard Medical and Surgical Journal (Norfolk, Va.), May.

157 Pseudo-Leukemia: A Report of Two Cases. A. H. Omann-Dumesnil.
158 Diabetes Mellitus of Apparent Bacterial Origin, and Its Successful Treatment. J. P. Sheridan.

AMERICAN.

2. **Antivivisection.**—Ernst's paper shows the fallacies and misstatements of the antivivisectionists.

3. **The Law of Dying Declarations.**—Sughrue gives the Massachusetts law of dying declarations, which make an exception to the rule that the defendant has the right to be present and cross-examine the witness. The reason for this is the presumed solemnity of the occasion and thus it is essential that they should be made while the patient is *in extremis* and thoroughly conscious of his condition. The statements must be relative to a crime, and descriptive of the crime itself, and of the person committing it. The form is indifferent; it may be oral or written. The cases in which they are admissible are regulated by the Massachusetts statute, and include those of homicide and abortion. They are only admissible when the death of the declarant is the subject of the inquiry. The jury have the right to consider all the circumstances under which the declaration was made and the state of mind, as shown by the testimony.

5. **Marks Produced by Pistol Shots.**—Hough gives the results of experiments made by him to show the marks produced by pistol shots at various distances. He used white blotting-paper, which he considered took about the same amount of powder mark as the human skin. He found that it is not possible to determine with absolute accuracy, from the mark alone what is the caliber of the weapon used or the distance from which it is fired. If the mark is a smut without tattoo the shot was fired at a distance not over 6 inches; if the mark consists of a tattoo with distinct smut at the center, then the distance was not over 2 feet; if the mark consists of a bullet-hole alone, the range was not less than 4 to 6 feet, if a 22-caliber was used; 7 to 9 if a 32, and 9 to 12 if a 38 or 41.

6.—See abstract in THE JOURNAL, xxxiii, 1615.

9. **Perimetric Diagnosis.**—Sherer's article gives a résumé of the facts as regards pathologic restrictions of the visual field and their conditions and lesions underlying them.

10. **Pneumatic Cabinet in Phthisis.**—De Vries describes a pneumatic cabinet devised by Dr. Williams, of Brooklyn, N. Y., which had the approval of the late Prof. A. L. Loomis as a valuable aid for the control of phthisis. He describes the apparatus and claims that it produces a much greater inflation of the lungs than is possible by the ordinary full inspiration, and thus increases pulmonary circulation and lymphatic absorption. When the patient is seated in the cabinet, while gradual rarefaction is made, the entire cutaneous and pulmonary pressure is diminished, the respiration is easier, and the vessels are dilated all over the body, though chiefly in the lungs, thus slowing the circulation at all points, and causing pulmonary congestion, which is developed in precisely the same way as in high altitudes, but differing from that following inhalation of rarefied air, in being modified by the dilatation of the cutaneous vessels. In placing the tube in his mouth, an action of the lungs is produced which removes the debris. He has found it exceedingly advantageous in hemorrhagic cases and in advanced stages of the disease. In the early stages, it is capable of doing much good, often arresting the morbid process. He considers it valuable in strengthening and developing weak and imperfectly developed lungs; and in the latter stages where cure is impossible, it prolongs life with comparative comfort. He suggests the tracheal injection in addition to the cabinet treatment, and thinks that it has been a valuable, though neglected, therapeutic agent.

11. **Tuberculin Test in Diagnosis.**—Anders favors the use of the tuberculin test for the early recognition of pulmonary tuberculosis, and claims that when properly used it is absolutely free from danger. He thinks that if its diagnostic value could be separated in men's minds from its therapeutic use many objections would be removed. It should not be employed in doses of more than .5 milligram at the beginning; after the lapse of a few days the injection may be repeated in larger dose.

13.—See THE JOURNAL of June 23, p. 1589.

14. **Obstetrics in Private Practice.**—Cooke thinks it necessary that a careful history should be kept of every case from the time it is first seen till the end of the puerperium. He uses cards, which are filled out, one for pregnancy, one for the labor, and one for the after-treatment; on these cards every detail is recorded and they are then filed for future referenee. For examination of the urine, he has adopted the following plan: A number of wide-mouthed, glass-stoppered bottles are provided with labels having these details—take specimen from mixed evening and morning urine and deliver before noon on specified date; amount for twenty-four hours; name, address, and date. In this way, he has all his urine examinations come in at one time. He has also provided himself with a number of wooden boxes containing bottles of distilled water and boric-acid solution, which he sends out to patients three weeks before labor is expected, so that it may be on hand for the needs of the case. Boiled water can always be had, but is not always available as promptly as required. He has given up the idea of having a sterilized obstetric bag and prefers to have his materials so that they can be sterilized on the spot if necessary; when needed they can be cooled with the distilled water which is at hand. In this way, he is independent of his outfit, and is prepared to go from one case to another without any lengthy sterilizing between.

16. **Scarlatina.**—Class reports experiments with cultures of the diplococci described by him as connected with scarlatina, and tests with serum obtained from inoculated animals. His results are not, as he admits, conclusive as regards the future of serumtherapy of this disease, but he maintains his belief as to the specific nature of the organism.

17. **Exophthalmic Goiter.**—The general conclusion reached by Gordon in this article is that exophthalmic goiter is a disease of the nervous system associated with a pathologic condition of the sympathetic nerves. He tabulates a number of cases of medical and surgical treatment of the thyroid and operations on the cervical portion of the sympathetic nerve as favoring his views. He lays down the therapeutic indications as follows: 1. If the syndrome of the disease is the result of a mechanical pressure on the sympathetic nerve—tumor or thyroid gland, etc.—remove the pressure, and if the symptoms persist, operate on the sympathetic. 2. If the syndrome of the disease is the result of reflex influence on the medulla and through the last on the sympathetic nerve from some remote affection, as fibroid uterine tumors, nasal polyps, etc., remove the last, and if the symptoms persist, operate on the sympathetic nerve. 3. If the syndrome of the disease occurs during the course of any spinal or other organic nervous disease, abstain from operation. 4. If there is no apparent cause, operate on the sympathetic nerve. At any rate, never operate on the hypertrophied thyroid gland. Medical treatment can be used, if the patient refuses an operation, but never expect any permanent cure or entire removal of the symptoms.

18. **Gastro-Intestinal Disorders.**—Bettman reports cases of chronic diarrhea associated with impaction of long standing, or scybala in the colon simulating gastric ulcer; and obstinate constipation with pain relieved by laxatives; also rectal trouble; internal hemorrhoids; and gastric catarrh simulating other conditions. He thinks that gall-stones may also start various forms of gastric disturbances, their diagnosis sometimes being decidedly obscure.

21. **Washing the Bladder.**—Fluhrer's apparatus, which is described in full, is designed to meet the indications for thoroughly washing out the bladder. Two conditions must be realized: the bladder must be in a state of comparative rest in any given capacity of contents during the procedure, and while thus at rest the contents must be more or less agitated. It is important to have an antiseptic impression as thorough as possible without causing irritation, and this apparatus is intended to give complete control over the irrigation.

22. **Impactions in External Auditory Canal.**—About 10 to 12 per cent. of all cases in ear clinics, according to Roosa and Burkner, are those of impacted plugs in the external ear. Four kinds are described. The first and most frequent form is inspissated secretion of the ceruminous and sebaceous glands, lining the canal. These may be of long standing and of considerable hardness. The second form is composed principally of epithelial scales due to chronic desquamative dermatitis of the external auditory canal. This is of a grayish or pearlish hue, usually not so smooth as the ceruminous plug, and is removed with considerable difficulty. The third variety is cholesteatoma, showing through the speculum as a pearly-gray mass. It originates usually in the mastoid cells and works its way toward the meatus, or originates in the canal and erodes toward the mastoid. It may complicate the epithelial plug and vice versa. Absorption of the bone may proceed to such an extent as to enlarge the canal so that the finger can be pushed down to the drum. The drum membrane is rarely injured, but the bone readily yields and the growth finds its way into the mastoid; and, unless completely removed, the case may end fatally, through mastoid involvement and its consequences. The fourth variety is associated with chronic suppuration and perforation, and consists of a hard, grayish, ill-odorous plug of dried pus, wax, epithelial cells, etc. It may lead to serious trouble. The simple ceruminous plugs are usually harmless though they may cause chronic dry otitis. The symptoms are sudden deafness, dizziness, pharyngitis, and in rare cases, paralysis, melancholia, reflex cough and bronchitis. Sometimes the hearing may even be improved for a time, while in some instances the brain symptoms have led to serious errors in diagnosis, a case of convulsions and coma being recorded, as due to this cause. The objective symptoms are the described mass in the meatus as seen through the speculum; the ceruminous plug being a black or brownish-yellow mass. The tuning-fork applied to the forehead or teeth is heard with exaggerated loudness in the ear containing the impaction. The patient may complain of deafness coming on suddenly, a fulness of the ear or dizziness, and the tuning-fork symptom mentioned may be present. In these cases, restoration of hear-

ing is only complete in from 30 to 40 per cent. The treatment recommended is mild syringing with warm water; the curette, as recommended by Buck, not being safe except in the hands of the skilled specialist. Extreme gentleness of manipulation and absolute antisepsis are essential; and after the removal of the occlusion syringing should be done with great caution. In some cases, it is necessary to soften the plug by a saturated solution of bicarbonate of sodium, a 2 per cent. solution of carbonate of potassium in equal parts of glycerin and water, dropped into the ear, warm, 5 to 10 drops, three to four times a day. This will soften the plug in a couple of days so that it can easily be removed. The use of olive-oil in the ear should be absolutely discountenanced as it favors the growth of the aspergillus. The tendency to recurrence is a characteristic of ceruminous accumulations, and is due to a hyperactivity of the secretory glands. It is therefore advisable to instruct the patient to wash the ear thoroughly, once a week, with a mild alkaline solution—1 dram of aqua ammonia to a quart of warm water—and castile soap. He insists on the importance of some knowledge of otology by the general practitioner.

23. **Soil Dampness and Tuberculosis.**—Newton discusses the subject of soil as related to tuberculosis and insists that this factor is of greater importance than milk and other matters that have been so much discussed of late. He thinks that it would be better to turn attention to the altering of the surroundings of patients and curing them of their vicious methods of life, instead of trying to annihilate the tubercle bacillus.

24.—See THE JOURNAL, of June 16, p. 1509.

27.—See THE JOURNAL of June 23, p. 1589.

30. **Colonial Treatment of Epilepsy.**—Brower's paper is largely historical, reviewing what has been done in the colonial treatment of epileptics in this country and abroad. He suggests the need of such an institution for Illinois and the plan on which it should be established.

31. **Maternal Impressions.**—The common belief in maternal impressions is noticed by McCutchon, who reports a case which seems to him unique. A newly-married woman, brunette, with her husband, who is also dark, saw an albino in a museum, who interested her very much. Nine months later she was delivered of a normal child, still-born; and again in eleven months, of a well-developed boy, who was a perfect albino. The third child was a boy with black hair, but with blue eyes like the first. The fourth was a perfect albino, the fifth and sixth were anencephalous albinos, the seventh was normal, the eighth, ninth, tenth and eleventh were albinos. There seemed to have been a tendency to abnormal births in a collateral branch of the family; and the patient's eldest sister was born deformed. The author quotes Dabney's conclusions in regard to maternal impressions, as published in Keating's "Cyclopedia on Diseases of Children." See also title 103.

33.—See abstract in THE JOURNAL of June 9, p. 1491.

35.—See abstract in THE JOURNAL of June 9, p. 1486.

37.—See title 117 in THE JOURNAL of June 23, p. 1649.

66. **Toxemia of Pregnancy.**—Grandin discusses this condition and points out that it is a grave error to test the urine of a pregnant woman for albuminuria alone. Toxemia may exist with very slight albuminuria or a larger amount of albuminuria may be significant of no serious condition. If there is a tendency to nephritis, the pregnant woman should be watched with great care, and where, notwithstanding regulated diet, etc., the urea and amount of urine diminishes, the question of arrested gestation should be seriously considered. When the eclampsia is imminent or present the sheet-anchor of treatment should be rapid evacuation of the uterus and, as a rule, venesection, and protracted irrigation of the colon with hot saline solution. Morphin is contraindicated, as is also ether. The effect of chloroform is temporary. Several cases are reported illustrating these views. He thinks the only justifiable treatment of toxemia is the surgical, before active manifestations appear. The latter part of his paper is given to the discussion of the operative treatment of uterine displacement. He thinks that uterine suspension meets his ideal more nearly than any other. He describes his method of operating, which he has employed in fifty or sixty cases.

67.—See abstract in THE JOURNAL of May 26, p. 1337.

68. **Ectopic Gestation.**—The treatment of full-term ectopic gestation is discussed by Cragin with reference to the endeavor to save the living child. He reports cases illustrating his views, and concludes from study and experiments that: The viable ectopic fetus is worth saving; that attempts to save the child do not seriously increase the mortality or morbidity of the mother; and that in the treatment of full-term ectopic gestation the child should receive more consideration than it does at present.

71.—See abstract in THE JOURNAL of May 26, p. 1338.

72. **Infarcts of the Placenta.**—This paper by Williams is accompanied by a very full bibliography. He says that infarcts measuring at least 1 cm. in diameter were observed in 63 per cent., while smaller ones were noticed in a great majority of cases, and microscopic examinations revealed early stages of their formation in every full-term placenta. The primary cause of these formations in a great majority of cases is found in the endarteritis of the vessels of the chorionic villi, the primary result of which is coagulation necrosis with a subsequent formation of canalized fibrin. The part played by the decidua in the production of infarcts has been greatly overestimated. It is more than probable, in a number of cases at least, that the tissue called decidual is really fetal ectoderm. Moderate degrees of infarction have no pathologic significance and are to be regarded simply as signs of the senility of the placenta, analogous to changes in the villi. When marked infarct formation occurs, however, it often results in death or imperfect development of the child It is usually associated with albuminuria on the part of the mother, though the relation existing between these conditions is not clear. They are not particularly observed in acute eclampsia unless they are preceded by decidedly albuminuric symptoms. There is no evidence of their bacterial origin.

75.—See abstract in THE JOURNAL of May 26, p. 1337.

82. **Treatment of Epilepsy.**—The general broad principles laid down by Spratling are summarized by him as follows: 1. Make an early differentiation of the type of epilepsy from which the patient is suffering. 2. If it is reflex epilepsy, or if the child is suffering from epileptic phenomena, the chances of cure are much greater than if the case is one of genuine epilepsy. 3. If genuine epilepsy is present, a much more accurate prognosis as to the ultimate outcome may be given and better principles applied in the treatment of the case. 4. Remove, as far as possible, parental sympathy from the treatment of the child for if allowed to assert its way this usually does more harm than good. 5. Endeavor to keep from the young epileptic the many patent nostrums that, when taken, only aggravate the disease by first masking the true symptoms, then destroying or impairing the functions of the gastrointestinal tract. 6. If the seizures are localized and a certain part of the body is chiefly involved at the time of convulsive phenomena, and exhaustion or partial paralysis is the result, apply physical means for its correction as soon as possible, for it is only by these means that such a difficulty can be overcome. 7. Learn to place great value on little things in studying the etiology and treatment of this obstinate malady. In illustration of the last point he told of a visit in January of the present year, to the Pathological Museum, in Berlin, under direction of Dr. Rudolph Virchow, where he saw six cases in which the hemorrhage had occurred in a capillary form in the brain. Dr. Virchow, without the use of any magnifying power, had no difficulty in locating the seats of these minute hemorrhages. He found that these with their results had caused death.

91. **Plantar Reflex.**—Walton and Paul have investigated the plantar reflex in a large number of cases, including 200 hemiplegics and diplegics, old and new; 30 cases of spinal

pyramidal disease; 70 infants, and 400 cases in which no recognized lesion of the pyramidal tract existed; and 100 cases taken at random from hospital patients outside the neurologic department. Their investigations confirm the importance attributed to the symptom by Babinski. They find that in health it may produce either flexion of all the toes or some of them, generally the outer; flexion of all the toes on one side, and of some, generally the outer, on the other; entire absence of movement on both sides in about 10 per cent.; flexion of all or some of the toes on one side with absence of movement on the other in at least 10 per cent., also, occasionally, in sensitive individuals, quick irregular movements, sometimes of flexion and sometimes of extension. In early infancy, no constant or characteristic movements of the toes appear, though extension is rather more frequent. The Babinski reflex occurs in about 70 per cent. of hemiplegics and diplegics, and in approximately the same percentage of cases of pyramidal tract disease of the spinal cord. The Babinski symptom —deliberate and constant extension of the great toe, with or without extension of the others—is never present in health; and other observations make its existence doubtful in either functional or organic nervous diseases not implicating the pyramidal tract. It is often the earliest to appear in pyramidal-tract disease, before the exaggerated knee-jerk and ankle-clonus and it may persist after other reflexes are absent. It is therefore a most important practical diagnostic point. This reflex very exceptionally appears in cases not conforming to recognized types of pyramidal disease—meningitis, hydrocephalus, poisoning, as by alcohol or uremia. Such instances are too few to materially impair the diagnostic value of the phenomenon. It should suggest pyramidal involvement possibly by edema or indirect pressure.

92.—See abstract in THE JOURNAL of February 27, p. 430.

98. **Tuberculous Peritonitis.**—Caille reports a number of cases of tuberculous peritonitis in which the first diagnosis was based on the abdominal symptoms, such as distension, pain, bowel disturbances, presence of fluid, and loss of weight; and was made by exclusion, excepting in those cases where the tubercle bacilli were found. In all a febrile rise in the temperature of the irregular type was met. The tuberculin test was employed in two cases, one with positive and the other with negative results; but he is unwilling to make a routine test with tuberculin in the present unsatisfactory state of our knowledge. He adds a fourth variety of tuberculous peritonitis to the three other classes, i e., tuberculous peritoneal tumors, two cases of which have been seen by him. The cases reported show the futility of medicinal treatment, and where such seems to succeed it should not be forgotten that spontaneous cures of this condition have been observed. The indication in all cases is early operation but that it will produce a complete cure is somewhat doubtful; and if there is also lung implication, the ultimate results are unsatisfactory.

103.—See also ¶ 31.

109. **Gonococcus.**—Young reports successful cultivation of gonococcus in chronic cystitis, pyonephrosis and peritonitis, thus adding three conditions to those already known to be due to the gonococcus. He discusses these cases and claims that they are more conclusive than those already published.

110. **Exfoliation of the Lips.**—Stelwagon reports two cases of persistent chronic exfoliation of the lips, both essentially the same disease, though one was more pronounced than the other. He considers the condition as allied to eczema seborrheicum, and is strongly impressed with its parasitic character. Bacteriologic examination of the second case was made at the laboratory of the Jefferson Medical College and several organisms were found, cocci and bacilli, and one indistinguishable from saccharomyces albicans. The treatment was not especially successful in one case, but in the second it seemed to hold the disease somewhat in abeyance. The method consisted in painting with salicylated tincture of benzoin and myrrh and silver nitrate solution, tincture of iodin, and ichthyol. Finally, lactic acid was employed, and, while the reaction was severe. the results were apparently rather favorable.

114.—See abstract in THE JOURNAL of May 26, p. 1338.

115. **Anatomy of Reflexa in Ectopic Pregnancy.**—This condition is described by Couvelaire from a study of specimens, and he sums up his results with the statement that there exists in the gravid tube during the first months a membrane, which limits the free pole of the ovum and acts as a reflexa. At the level of this reflexa, chorial villosities and intervillous space are as much developed sixty-six days after the last menses as at the level of the parietal insertion of the ovum. A little later—about 2½ months—there is atrophy of this reflexa by means of thrombosis of the umbilical vessels, and atrophic degeneration of the villosities throughout nearly its entire extent. The membrane which divides the intervillous space of the tubal cavity of the free pole of the ovum is made up of two distinct layers; the first, an internal continuous layer, the compact cellular layer of the reflexa, which is formed by large living cells grouped in a solid mass, lodged in alveoli of an amorphous intercellular stroma, analogous to the fibrin streak of the uterine ovum. These are in continuous relation with the epithelial process and a certain part of them are undergoing degeneration which begins in the more excentric layers. This accompanies the atrophy of the reflected placenta. The second layer is an internal non-continuous fibrous layer, strewn with degenerated cellular elements and infiltrated with round cells. At the source of the reflection the internal layer of the cell is continued in its entirety unmodified in the zone of parietal fixation of the ovum, to form a complete capsule for the latter. The fibrinous layer has ceased, and the cuboidal epithelium which covers the sector of the free tube opposite the reflexa is arrested at the summit of the angle of reflexion or is reflected for a very short extent—1½ mm.—of the cellular layer of the reflexa. There is found at a distance from the sinus of reflexion some tracts which cover the external surface of the internal layer of the reflexa, where the fibrinous layer is non-adherent. Sixty-six days after the last menses, the reflexa presents neither vessels nor gasal buttress of vessels, and the living decidual cells become continuous with a parietal decidual layer, as in the uterus. The decidual action in the gravid tube during the first month is far from being as intense, as general, as it is in the gravid uterus at the same period.

116. **Uterine Displacements.**—While many uterine displacements cause no symptoms, they are, as a class, responsible for much suffering, and Frank discusses the subject in detail. The uterus is maintained at its proper level purely by its specific gravity and this implies an intact perineum. It lies in the position of anteversion and is movable within certain limits; its axis, with the bladder partially filled, is on a parallel with that of the inlet of the pelvis. The cervix is set in the vagina almost at a right angle. It is erroneous to suppose that the ligaments maintain the position of the uterus. They simply serve to prevent exaggerated mobility. They act just as guy ropes do upon a derrick, permitting it to swing backward and forward but always bringing it back to its proper place again. The causation of displacements is not a difficult thing to understand. They may be due to increase in weight or relaxation of the pelvic floor. Anterior displacements are rarely pathologic, when they are they do not offer a fruitful field for treatment. Medicinal treatment is of no value, except for relieving pain. Retrodisplacements are the ones which have been most treated, and Frank considers that there is no one method which applies to all. The mode of supporting treatment by pessaries has been used in maintaining the uterus in position until such a time as it could be restored to its normal size. No case can be cured by a pessary if there exists impairment of the pelvic floor or perineal laceration. It is contraindicated in inflammatory diseases of the appendages or tissues around the uterus. As to the operative treatment adopted for relieving the condition, he mentions those which are carried out most frequently, i. e., ventrofixation, ventrosuspension and the Alexander operation. As regards the first, it should not be attempted unless other means have been first faithfully tried. If the organ is fixed by the adhesion and it is necessary to open the abdomen to relieve these condi-

tions, then it may be considered. The operation of ventrosuspension, as advocated by Kelly, is somewhat better, but as its originator says, "It should be used only in cases of persistent retroflexion which refuses to yield to simpler plans of treatment through the vagina, and then only when it interferes seriously with the health." This last applies to all operative procedures. The other operative measure is the Alexander operation, and while it is condemned by many, it yields excellent results to some and is especially recommended by Kellogg. In every case attention should be given to the condition of the perineum, and this is especially true in those cases where prolapsus is the predominant symptom. Emmet claims that all cases of prolapse may be cured by plastic procedures by the way of the vagina. They certainly should be carried out in all cases where there is the least indication for them, otherwise neither ventrofixation, ventrosuspension nor pessaries of any sort will afford relief.

126. **Treatment of Inoperable Cancer.**—Coley's method of treatment with mixed toxins of erysipelas and bacillus prodigiosus is reported with additional cases. He has not changed his opinion as to the benefits of this method, but he finds the round-celled sarcoma much less susceptible than the spindle-celled, and the melanotic still less susceptible. The dose given depends largely on the vascularity of the tumor and the condition of the patient. The initial dose should seldom be more than one-half a minim diluted with boiled water, which should be gradually increased until reaction temperature reaches 102 or 103 F. After the dose has been increased to 1 minim, dilution is unnecessary, and if it is not injected directly into the tumor, much larger doses can be borne. He thinks the best preparation is mixed unfiltered toxins of erysipelas, but in weak individuals and children the filtered toxins are safer. He dwells on the importance of aseptic precautions and claims that the risk from the treatment, when properly given, is comparatively insignificant. If 10 per cent. instead of 1 per cent. of these otherwise hopeless patients can be cured, the outlook for this method is encouraging.

134. **Mechanism of Agglutination.**—The importance of the Widal reaction in clinical medicine has led Ernst and Robey to investigate its mechanism so far as it can be done. They review the various theories and observations on the subject by Gruber, Bordet, Pfaundler, Gengou, Rodet, Malvoz and others and give the results of their own tests. In conclusion they say that these studies do little more than furnish limited control of the work of others; but from these and other observations, it seems: 1, that the agglutinating property does not lie in, and is in no way connected with, the flagella of the bacteria concerned; 2, that agglutination is not to be accepted as a specific property connected with a condition of immunity, although this is a difficult idea to discard; 3, the homologous nature of agglutination can not be considered a positive characteristic, for how then could the clumping of typhoid bacilli by diphtheria antitoxin be explained; 4, finally, that no universally applicable explanation of agglutination has yet been offered. The most rational theory yet suggested seems to be that of Bordet, that an agglutinating agent—"agglutinine"—acts on an agglutinable substance—"substance agglutinée"—the nature of which is not yet determined—and that this reaction occurs not only with bacteria, but with many other elements—globules, casein, and precipitates of various kinds.

135. **Azoturia.**—The pathologic results of eleven cases of undoubted azoturia are described by Brinckerhoff. He concludes: 1. The acute degeneration of the liver and kidney, the proliferation of epithelioid cells in the lymph follicles of the spleen, and the focal necroses in the liver are similar to lesions found in man during various of the acute infectious diseases. In the human being such changes are generally regarded as manifestations of a toxemia. 2. The pigmentation of the spleen indicates nothing more than a destruction of blood-corpuscles, and is common to a number of diseases in both man and animals. 3. The degeneration of the psoas muscle is quite analogous to the Zenker's degeneration seen in typhoid fever. 4. The chronic interstitial nephritis indicates either that some toxic substance has acted for a considerable time, or that there have been previous acute attacks. We have, then, the picture of a pathologic process combining chronic and acute factors. This condition seems more reasonably explained by postulating the presence in the organism of a toxic substance, preferably one capable of causing both acute and chronic changes. In this study of the lesions found in azoturia, pathologic changes have been found which merit further study. Experiments on animals have been commenced, but the material at hand from that source is not sufficient to be reported at present, and is reserved for later publication.

136. **A Possible Cause of Azoturia.**—Balch, led by the similarity between certain of the symptoms in azoturia and those found in lead poisoning, has made examinations of urine in cases of azoturia, and found lead present in a large proportion of the cases, both of normal horses and those with azoturia. The results are suggestive, if not positive proof of this cause of the disorder.

137. **Sympathetic Ganglion Extract.**—Cleghorn's experiments point to the fact that the active depressor substance in sympathetic ganglion extract is not choline, but may be of similar nature to the substances described by Osborne and Vincent as present in extracts made from brain tissue. He makes no claims that the sympathetic ganglia possess an internal secretion.

142.—See abstract in THE JOURNAL of April 28, p. 1067.

143. **Improved Artificial Globe Implantation.**—The method devised by Suker consists in inserting, after enucleation of the eye, an artificial globe surrounded by an antiseptic surgeon's sponge, tied or sewed with catgut, which is inserted into the capsule cavity and sutured with chromicized catgut. The recti muscles are brought together in pairs and the whole fixed by an annular ligature. The black silk sutures are now removed from the recti muscles, and then the conjunctiva is brought over the muscles and sutured with silk or catgut. It is best to employ two sets of sutures for the conjunctiva; a so-called edge suture and an anchor suture alternating. This anchor or retention suture is placed as far back as possible from the cut edge of the conjunctiva in order to relieve any strain on the continuous or interrupted edge suture. It is best to apply four or five of these retention sutures, as this obviates any chance for gaping of the conjunctiva or tearing out of the edge sutures. They should be left in for two or three days after the removal of the edge sutures. The eye is now dressed with a dry-dressing gauze pad immersed in one part boric acid and four parts amyloform. Above all things, the use of pressure bandages should be avoided. It is advisable to employ an ice-bag for the first twenty-four to thirty-six hours; and great caution should be used to have everything thoroughly aseptic. An artificial shell—the ordinary or Snellen's—may be inserted at the expiration of a month or six weeks. If thought best, the nasal or temporal end of the conjunctiva may be left open and a fine gauze drainage inserted after operation, but ordinarily, this is not required. The advantages claimed for this operation are enumerated as follows: 1, less liability of extrusion of the globe; 2, almost absolute immobility of the inserted globe; 3, the range of movement of the stump thus obtained is just as great, if not greater, than by any other method; the inserted globe is more thoroughly protected from pressure of the shell than by the other operation on account of this so-called cushion; 5, the amount of shrinkage in consequence of the granulation tissue necessary to absorb the sponge is very trifling; 6, it takes but a trifle longer than a simple enucleation, due to the absorption process of the sponge; 7, no more reaction follows than after an ordinary enucleation.

148. **A Diagnostic Point in Third Nerve Paralysis.**—The point made by Wishart is that if the lesion is basal and unilateral there will be found paralysis of all the muscles supplied by the third nerve on the same side as the lesion, but if the lesion is nuclear and unilateral there will be a similar paralysis of all the muscles, except the inferior oblique, together with paralysis of the inferior oblique in the opposite eye. In the first instance, there is complete monocular third nerve paralysis, and in the second, complete unilateral nuclear

third-nerve paralysis. He discusses the anatomy of the conditions according to the best authorities in support of his view. The only case of the second variety of which he has any knowledge was one reported by him in 1897.

FOREIGN.

British Medical Journal, June 16.

Mauser Bullet Wounds and Amputation. WILLIAM STOKES.—As the war advances, Stokes believes that we will have to modify the already conceived notions to some extent and consider bullet wounds as more formidable. From his experiences at Maritzburg Hospital and the general hospital, Mooi River, he finds them increasing in gravity in themselves and also more difficult to keep aseptic. The first is partly due to the Boer practice of splitting the ends of their bullets and making them expanding ones, and also to the closer range fighting of late. The difficulty of asepsis is probably due, not only to the thus increased severity of the wounds, but also to the greater hardships and their depressing effects, toward the close of the campaign. The cases he reports indicate, he thinks, that the Mauser bullet is not always so "harmless," "humane" or "merciful" a projectile as is supposed.

Recent Observation on Filaria Nocturna in Culex: Probable Mode of Infection in Man. GEORGE C. LOW.—The author concludes from his observations and examinations, that the transmission of the filaria from mosquitoes to man is probably directly through its bite. He found that in filariated mosquitoes, the parasite takes up a position in the proboscis, the head invariably in advance and generally two of them together tête-a-tête.

The Lancet, June 9 and 16.

Massage in Recent Fractures and Other Common Injuries. WILLIAM H. BENNETT.—In this second lecture, the writer treats of the uses of massage in fractures of the patella and the olecranon. The two principal points dwelt on are: 1. The avoidance under all circumstances of any change of the upper part of the fractured patella or olecranon becoming adherent to the subjacent bone, and this can be insured by massage and lateral manipulation combined with gentle flexion and extension, during which the detached fragment is made to move as much as possible with the distal portion of the limb, the lateral movement being most easily managed and least disturbing. 2. All manipulations and passive movements must be preceded by smooth rubbing of the muscles. In this way the best results are obtained in these fractures, though this does not preclude the usual necessary operative treatment. Following this, he speaks of the effects of immediate massage and manipulation in dislocations. Here the chief difficulty is not the ruptured tendon but the muscular contraction. The capsule will heal equally well whether the joint is done up in splints or is manipulated. The torn capsule may be ignored and work against muscle waste by massage commenced immediately after reduction, using smooth rubbing for the first two days, after which passive motion should follow the massage. This passive movement should be free in all directions, save the direction of the muscles which tend to waste. Thus, in case of the shoulder, abduction of the arm from the trunk should not be practiced for a week or ten days after the injury, as the action of the adductors unopposed for the time by the weakened deltoid, tends to displace the head of the humerus inward. The cardinal point is to rectify muscular atrophy by massage and methodical exercises, with or without electricity and not to shorten the lax capsule. The treatment of sprains, wrenches, etc., is similarly taken up and practical points suggested. The effusion can be reduced by massage, and later, passive movements may be employed. The first of these should be of the simplest kind, and the last movement to be practiced should be that which was concerned in the production of the injury.

Contribution to Knowledge of Uric Acid Salts. F. W. TUNNICLIFFE AND OTTO ROSENHEIM.—From their experimental studies the authors conclude: 1. There is no evidence of the existence of a third order of uric acid salts, i. e., quadriurates, either in the artificial or the natural amorphous urinary deposits or in the fluids of the body. Under these circumstances it is regarded as advisable to discontinue the use of the term "quadriurate." 2. The substances obtained artificially under the conditions supposed to produce quadriurates consist of mixtures of uric acid and biurates pure or in varying proportions. 3. Natural amorphous urinary deposits consist of a mixture of uric acid with urates of sodium, ammonium, potassium, calcium, and magnesium—containing in most cases in addition phosphoric acid. 4. The property of some natural and artificial amorphous urates of showing the formation of uric-acid crystals under the influence of water is due to the dissolving out of the more soluble biurate moiety and a change in physical state of the remaining uric acid. 5. Any theory concerning the pathology or treatment of gout or the uric-acid diathesis built on the assumption of the existence of quadriurates requires reconsideration. 6. The existence of two forms—the tautomeric lactam and the lactim—may explain the variation in the physical and physiologic behavior of this acid and its salts.

Management of Anesthetic Where Respiratory Impediment Exists. DUDLEY W. BUXTON.—The author reports three cases from which he lays down the following propositions as showing the need of caution in anesthesia and suggesting the remedies: 1. The individual patient possesses a certain respiratory power. Individuals differ greatly in this respect, and it is the business of the anesthetist to make himself acquainted with what may perhaps be termed the "personal respiratory equation of the patient." 2. This individual power of respiration is interfered with by every form of anesthetic, more by some than by others, but under any, the power of inspiration and expiration is lessened and in some cases to a very marked degree. 3. This lessened respiratory power may be of little or no consequence under normal conditions, but it becomes a factor of grave danger should any intercurrent cause of respiratory obstruction occur. For example, a delicate child breathing with difficulty through a blocked nasopharynx is placed under chloroform. The mouth is opened and the jaw is depressed while the tongue is forced back. The respiratory power would under these circumstances be wholly inadequate to overcome the increased difficulties of respiration. The child would die, and the death would be attributed to heart failure. The same occurs in cases of goiter, of malposition of the patient's body, of thoracic operation, etc. Thus it appears that all the cases cited fall into line and reveal to us not only the evident, but also the insidious, dangers associated with them.

Bulletin de l'Academie de Medecine (Paris), May 29

Human Hematolysin. METCHNIKOFF.—The research reported in this communication has been already cabled to the daily press as the discovery of a cure for leprosy. The subjects of the tests were lepers, as Carrasquilla in his serotherapy of leprosy inaugurated unwittingly these hemolytic experiments on man, and Metchnikoff utilized the results of this work as the first steps in the study of human hematolysis. His aim was to discover if it is possible to increase the resisting powers of the organism by stimulating blood-production. He had established that this could be accomplished in animals by minute, progressively increasing doses of a serum which in large doses destroyed the red corpuscles. Cautiously tested on four lepers, he found that hematopoiesis was increased as anticipated, without inconveniences or after-effects of any kind. Two other lepers were then treated, one with .5 c.c. of an extremely powerful hemolytic serum from a goat prepared with human blood, and the other with 5 c.c. of the same serum. After a brief preliminary period, in which the proportion of hemoglobin and red corpuscles fell below normal, they both increased to a marked extent in leper "A" for a few days and in leper "B" for three weeks, when a second injection was made without waiting for the subsidence of the effects of the first. Leper "A" was injected again in fifteen days with 3 c.c. of the same serum and leper "B" with 8 c.c. the second time. The effects were the same as at first: marked increase in hematopoiesis after a brief interval of decrease. The hemoglobin in leper "A" attained 120 to 125 per cent. The stimulating action of cellular toxins on the corresponding elements can thus be

accepted as a general law. It establishes the possibility of augmenting the resistance of the tissues in case of need, but it by no means "cured the leprosy," and such an announcement is farthest from Metchnikoff's intentions.

Prophylaxis of Paludism.—The committee appointed for the study of malaria has drawn up a brief code of instructions for persons living or traveling in malarial countries. It states that a mixture of tar and petroleum is more satisfactory and durable than the latter alone, to pour on the surface of stagnant water to destroy the larvæ of the mosquito. The depth of the water need not be taken into account; 10 c.c. to the square meter is sufficient, applied early in the spring and renewed every fortnight. The larvæ are suffocated by obstruction of the air-passages with droplets of oil. Cisterns should be covered, or ordinary oil can be poured on the surface. Patients with malarial fever should be guarded with netting to prevent infection of mosquitoes.

Laparotomy for Retroversion of Gravid Uterus. PINARD.—In one case, the advanced pregnancy and in another an ovarian cyst rendered reduction impossible. The uterus was firmly lodged in retroversion. The laparotomy, performed by Mouchet, was successful in each case and pregnancy continued normally to term. The bladder and rectum should first be evacuated in such a case and every effort made to induce spontaneous reduction. If this fails, manual reduction through the vagina, with or without anesthesia, should be tried. A bulb inserted and inflated in the rectum is the only instrumental intervention permissible, unless laparotomy is indicated as a last resort.

Congenital Luxation of Hip-joint. DUCROCQUET.—The Paci-Lorenz method of bloodless reduction of congenital luxation of the hip-joint includes early use of the limb by the patient, but radiography has shown that although the functional results may be satisfactory, the anatomic conditions are sometimes far from normal. Docrocquet considers this a technical blunder and has treated eight patients by applying the principle of immobilization in an over-corrected position for a few months afterward, with the result that not only the functional but also the normal anatomic conditions are restored, as far as can be determined by radiography.

Bulletin de la Soc. Med. des Hop. de Paris, May 31 and June 6.

To Determine Size of Heart by Radiography. M. A. BÉCLÈRE.—There is one point in the radiograph or on the fluoroscope on which the rays fall perpendicularly. It is easy to determine this point and Béclère adjusts the tube until the perpendicular rays coincide with one edge of the heart. The tube is then moved in a parallel plane until perpendicular to the other edge; the distance between these two points, marked on the fluoroscope, is the exact diameter of the organ. He recommends placing the tube under the cot on which the subject reclines, or if he is seated, keeping the tube immovable and moving the patient and screen.

The Doubtful Ward at the Hopital des Enfants-Malades. MOIZARD.—More than 5000 children have passed through this ward in the last 4½ years, and only seven cases of contagion have been observed, six of measles, and one of diphtheria during the first month. The ward is divided by glass partitions and doors into twenty cells, each of which has a large window. The glass partitions do not quite reach the floor and are only 7½ ft. high, while the ceiling is more than twice this height. Each person entering the cell puts on one of several blouses kept constantly there and when he leaves dips his hands in a jar of a 1/1000 solution of mercury oxycyanid and, without wiping them, removes the blouse. The air circulates freely above and below, and yet aerial contagion has never occurred. Children with whooping-cough, with varicella and sometimes with other infectious diseases, are kept until recovery, as there is no place elsewhere for them in the hospital or on account of uncertain diagnoses. The glass walls of the cell prevent the children from feeling lonely in their isolation.

Echo Medical (Lille), June 3 and 10.

Conjugal Tabes. INGELRANS.—Babinski states that he has observed fifteen cases of conjugal tabes, and that there are thirteen on record in the literature. These experiences establish the existence of a special syphilis affecting predominantly the nervous system, irrespective of the soil. There must be, therefore, a variety of syphilis with a peculiar predilection for the nervous system, and persons deriving syphilis from this source are liable to have the nervous system affected. In the cases of "conjugal syphilis," in which both husband and wife may be assumed to have been infected from an identical source, if the syphilitic infection is of this essentially nerve-attacking variety, the manifestations will occur in the nervous system, but chance alone will determine whether they will appear as tabes, general paralysis or cerebral lesions.

Thermic Hyperesthesia in Neurasthenia. INGELRANS.—It has been established that hysteria may induce fever, and some writers claim that neurasthenia may produce the same phenomenon. Parisot and Ingelrans have been studying this "fever of neurasthenia" independently and have come to the same conclusion, proving that the rectal temperature remains normal or varies but a small fraction of a degree although the patients experience and appear to have fever. This phenomenon is due to a cutaneous vasodilatation which induces heat and is subjectively interpreted as fever by the abnormally acute perception of peripheral warmth peculiar to neurasthenic conditions.

"Head-stone" Extractors. H. GAUDIER.—The expression "he has a stone in his head" has been applied for centuries to mentally unbalanced persons. The charlatans of Europe used to profit by the opportunity the term afforded them, and claimed to be able to cure insanity, epilepsy, etc., by removing the stone which was causing the trouble by pressure on the brain. They incised the scalp and by a sleight-of-hand maneuver produced a blood-stained pebble which they exhibited to the by-standers and pocketed their fee of the grateful relatives. An interesting old picture has recently been found in an obscure corner of the museum at Saint-Omer, attributed to a Dutch painter who died in 1569. It portrays such a scene with several charlatans at work and additional patients being brought in.

Journal de Medecine de Paris, June 3 and 10.

Iodin in Treatment of Tuberculosis. L. JOLLY.—"The increasing predisposition to infectious diseases in general and to tuberculosis in particular, is due to the insufficient phosphatic mineralization of our food on one hand, and on the other, to the alteration of the intercellular nutritional functions, from some toxic cause, which hinders cellular reconstitution and leads to the fabrication of additional toxic substances." Jolly asserts that the therapeutics of tuberculosis, as generally practiced, does not meet these conditions, which he accomplishes with large doses of metalloid iodin in an unstable organic combination associated with the physiologic phosphates, i. e., of potassium, sodium and iron. He has treated a hundred patients by this method, with the most gratifying results, and has kept all under observation for seven to nine years. He commences with 5 cg. of iodin a day and increases the amount by 5 cg. each week until a maximum of 40 cg. a day is reached. This treatment is continued for six months and then at half the dose for more than a year. No inconveniences have been experienced and all his patients in the second stage of the disease have been cured and kept in good health for eight years, and have no detectable signs of their former affection. He resumes the treatment at the slightest suspicion of relapse, and always during a "cold." He advises commencing treatment at the first indication of a progressive tendency to tuberculosis, which is usually a rebellious false anemia. It differs from true anemia in its appearance at any age; the number of the blood-corpuscles is not altered, but they become deformed, and the hemoglobin a reddish-yellow. The complexion is a yellowish-white, instead of the milky-white of true anemia. There is also more or less pronounced emaciation with loss of strength and appetite.

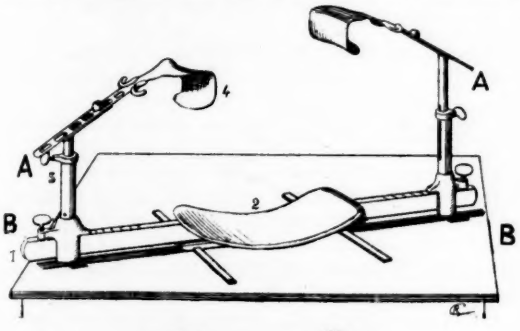
Medical Cure of Pulmonary Gangrene. DIAMANTBERGER.—The symptoms of pulmonary gangrene in a girl of 14 indi-

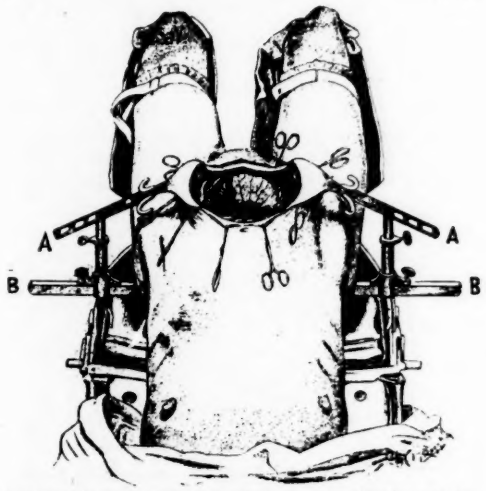
cated an advanced stage of the lesion when first seen. An injection of 10 cg. of guaiacol in almond oil was made in the gluteal region every day, and a small rectal injection of twenty drops of the same solution was retained. The thorax over the cavity was painted with guaiacol and the rest of the body rubbed with camphorated alcohol. The symptoms rapidly improved to complete recovery. Ozenne has also reported a case of circumscribed pulmonary gangrene in a woman of 30, in which the patient recovered with no special treatment except injections of artificial serum.

Presse Medicale (Paris), May 30, June 2 and 6.

Pneumococcemia Resembling Plague. E. TRETROP.—A dock hand at Antwerp had his finger crushed, and from this portal of entry the pneumococcus invaded his system, inducing a typical bubo in the axilla and symptoms of general sepsis which suggested the plague. He was, therefore, inoculated with 40 c.c. of antiplague serum from Paris, but no cultures could be derived except of a virulent pneumococcus. The inoculation of serum, however, produced an unmistakably beneficial effect and convalescence commenced in two or three days afterward. There were no respiratory symptoms at any time.

Automatic Abdominal Retractor. T. JONNESCO.—Forceps with five long teeth on one blade and four on the other—nine-toothed forceps—are applied, three on each side of the abdominal incision, holding the edges of the peritoneum, subcutaneous tissue and skin, drawing the peritoneum far over, to prevent oozing of fluids into the wound. The two retractors,





"A," "A," are broad and mounted on standards set in a cross-piece, "B," on which the patient lies, holding the entire apparatus firm although it is not fastened to the table in any way. When the forceps are in place, the retractors are hooked over the edges of the wound, which they enlarge and hold without the aid of an assistant, opening the field wide to the light. As the apparatus is fastened only to the patient himself, it yields and moves with him, and he can completely alter his position without affecting the grasp of the retractors. At the same time, there is not the slightest injurious compression, as the pressure comes solely on the dorso-lumbar-sacral region behind, and on the lips of the wound in front. Jonnesco has found this simple apparatus extremely useful and recommends it for all abdominal operations.

Lesions of the Cortical Nerve-Cells. G. MARINESCO.—The lesions studied in Marinesco's latest research are what he calls "achromatosis," and a coagulating necrosis with disintegration of the coagulated portions or "corpuscular formation." He considers the latter a manifestation of serious disorders in nutrition owing to disturbances in the circulation. He observed it constantly in encephalitis, in experimental myelitis, in hyperthermia and occasionally after ligature of the abdominal aorta. Another lesion which resembles this is partial coagulation of the cytoplasm, without disintegration: a dark band extends from the wall of the nucleus into the principal prolongation. In certain affections he noted atrophy of the nerve-cell, which had shrunk to a fraction of its former width. In achromatosis of the giant cells of the pyramids, the protoplasm does not stain, but resembles ground-glass in its appearance; the nucleus is atrophied and homogeneous. He explains this by the abrupt dissolving of the chromatophile elements, loss of the affinities between the elementary granulations and their gradual disappearance by absorption or elimination. In normal conditions there is probably a dual current between the fluids in the nucleus and in the cytoplasm. When the normal balance between them is disturbed from any cause, if the fluid inside the nucleus is drawn out, the pressure from within is removed and the membrane of the nucleus retracts, leading to atrophy and "homogeneization" of the nucleus, and even of the nucleole. Any cause that tends to disturb the balance between the fluids in the cell is liable to induce this lesion, and it was found constantly, as anticipated, in acute and chronic inflammations of the brain and spinal cord, in slow obliterations of cerebral arterioles, etc. Another interesting fact noted by Marinesco was the phagocytic behavior of the cells of the neuroglia in most of these lesions of the nerve-cells, especially when the achromatic substance or the nucleus was affected. He believes that the nutritional balance between the different elements of the nervous system is maintained by the secretion of certain toxic substances produced by the nerve-cell, substances which prevent the excessive development of the neuroglia-cells and regulate the nutrition of the tissues. When the nerve-cell degenerates, these substances are no longer produced and consequently, the regulating function—which controlled the nutrition of the tissues—ceases to act. He maintains his former classification of primary and secondary lesions of the nerve-cells. Those described above are what he calls primary; the secondary lesions are due mostly to chromatolysis.

Significance of Persistent Chubbiness. L. AZOULAY.—When a child or youth retains his chubbiness, especially of the face, at an age when other children or youths have lost theirs, it is an indication that the organism is correspondingly backward in its development, and should arouse apprehension in respect to the development of the sexual organs and the psychic faculties. Such young persons should not be forced in school or work, but should be kept in the country and every means taken to favor their physical development.

Early Diagnosis of Deafness with Paracoustic Test. P. BONNIER.—A person with normal hearing does not hear a tuning fork distinctly when it is placed on a remote part of the body, but a deaf person perceives the sound more distinctly than when the fork is vibrating on a level with his ear. It has been Bonnier's experience that a positive result with this paracoustic test invariably indicated an aural lesion entailing the prognosis of progressive deafness, sure to appear sooner or later, unless the lesion were cured without delay.

Semaine Medicale (Paris), May 30 and June 6.

Acid Intoxication in Diabetes. A. JAQUET.—We must not wait for onset of coma before we commence to neutralize the excess of acid in the blood in diabetes. Whenever the general appearance of the patient, or examination of the urine, indicates that coma is imminent, sodium bicarbonate should be administered in sufficient quantities—30 to 40 gm. a day. The proportion of ammonia in the urine affords a certain test by which to relax or accentuate the treatment. This alkaline treatment does not cure the disease, but it prolongs life and prevents accidents. Thirty-six observations are on record.

In 8 the alkaline was administered entirely or partially in the form of artificial serum—8½ liters in one case—with two successes. In the 28 other cases, the treatment was successful in 7; there was transient improvement in 7, and failure in 14. In a number of these cases the treatment was notoriously insufficient—what are a few grams of bicarbonate in comparison to the quantities of oxybutyric acid which Magnus-Levy has established? In others the alkaline was suspended after the subsidence of the most alarming symptoms, and resumed too late. The effect was most beneficial when administered at the commencement of the coma.

Centralbatt f. Chirurgie (Leipsic), June 9 and 16.

Chirol. New Method of Sterilizing Hands. R. KOSSMANN.—A Berlin firm has finally succeeded in producing a material composed of certain resins, oils, ether and alcohol, which when applied to the hands, dries in two or three minutes and forms a thin, strong, impermeable covering not interfering in the least with the sense of touch or the movements of the fingers. The entire field of operation can be easily sterilized in this way, also the hands of assistants and attendants. The varnish is not affected by water, solutions of sublimate or chinosol, nor even by 5 per cent. formalin, but washes off readily in alcohol. Kossmann mentions that after dipping three fingers in chirol he played a game of ten-pins and the coating showed no signs of wear until after he had rolled his twentieth heavy ball. It protects the operator against receiving as well as imparting infection, and "if midwives were compelled to use this inexpensive substance, a great boon would be conferred upon humanity."

Stereoscopic Views. H. HILDEBRAND.—The difficulty of taking stereoscopic radiographs has prevented the general use of this method, which is exceptionally valuable for the investigation of congenital luxations of the hip-joint. To facilitate its application Hildebrand has contrived a plate-holder to take two radiographs without disturbing the subject. The top is made of stout cardboard, but only the middle third is exposed; the rest is covered at each end with a sheet of zinc. cardboard. This part is then pushed along under the zinc, exposing the other half. The tube is also moved 7 cm. in a parallel plane. The two negatives thus obtained are photographed side by side at the proper distance—7 cm.—to adapt them to the size of an ordinary stereoscope. The views are amazingly accurate and life-like, enabling the conditions in the hip-joint to be determined with almost mathematical exactness.

Deutsche Medicinische Wochenschrift, May 31, June 6 and 13.

Permanent Canula for Carcinoma of Esophagus. C. A. EWALD.—The points of special interest in this case-report are the benefits of fastening the permanent sound by drawing the strings through the nostrils and tying them across the septum of the nose, instead of to the ears. Another point is the possibility that the stenosis may become impermeable for a sound, owing to the winding course of the passage, long before the ability to swallow fluids is lost.

Hysteric Deafness. E. BARTH.—Notwithstanding absolute bilateral deafness, unconscious musical tone-perception may be retained, as in the following observation: The child always followed the key set by the piano and also the tempo, if gradually changed, but was unable to consciously hear a sound. Her deafness was the result of a fright, and disappeared suddenly during the night after a few weeks. Barth concludes that there must be an acoustic center, "below the threshold of the consciousness."

Loss of Brain Substance Without Functional Disturbances. A. GUTMANN.—A lad of 12 was caught between two ox-carts and his right temporal region crushed with the loss of three fragments of brain matter the size of a lentil seed and another the size of a walnut. He recovered without a trace of functional disturbance.

Relapses. LIPPMANN.—After recovery from an infectious disease some of the germs may still linger in the organism, encapsulated in an inflammatory reactive process, where they may remain harmlessly imprisoned for years or become liberated by a trauma affecting the region, by some violent emotion or exposure to cold. In the latter cases the blood, driven inward from the periphery by the emotion or cold, would scarcely have power to break the wall of the capsule, but when the reaction follows and the blood surges back to the periphery, it leaves a vacuum in which the wall of the encapsulated focus may succumb to the negative pressure. He describes some typical instances of relapses after infectious diseases, in which this mechanism was clearly evident, among them a case of erysipelas recurring after every fit of anger, and another of scarlet fever in which a ganglionary enlargement in the neck persisted for several weeks after recovery. It was then treated with hot cataplasms, resulting in its complete subsidence in twenty-four hours, with the simultaneous return of the scarlet fever, eruption and temperature. In another instance an abscess developed from a latent focus of osteomyelitis after trauma, although thirty years had elapsed since the last perceptible manifestation of the morbid process.

Benefits of Hot Baths in Climacteric Disturbances. GOTTSCHALK.—Sweats and "hot flashes" consecutive to removal of the uterus and adnexæ, were uninfluenced by organotherapy in the two observations described but they promptly subsided after a few hot baths of twenty minutes each, with 5 pounds "Stassfurt salts" dissolved in the water, taken just before retiring. In a number of cases in the writer's experience a month of these baths completely cured all the climacteric disturbances. He ascribes the benefit to the dilatation of the peripheral vessels which they induce. This relieves the arterial pressure, probably excessive on account of the absence of the menstrual flux.

Dangers of Lumbar Puncture. F. GUMPRECHT.—Fifteen instances have been reported in which death followed lumbar puncture, and although it was a mere coincidence in a few cases, yet in large proportion, an evident connection between the intervention and the fatal termination could not be excluded. Gumprecht adds two new observations to the list, and on reviewing these and the rest on record, he finds that the fatal cases were almost invariably persons with tumors of the brain, and especially in the posterior fossa. Even before the puncture the patient showed symptoms of cerebral pressure, and the pain in the head increased to such an unbearable degree that the attempt was abandoned in several instances. The pressure of the cerebrospinal fluid was not always excessive: occasionally it fell to zero after 5 c.c. had been withdrawn but usually about 50 c.c. escaped under high pressure. In most of the fatal cases death followed the puncture within a few minutes; when delayed, the headache continued, with loss of consciousness and sopor for several hours, then abrupt cyanosis and cessation of respiration, although the heart continued to beat for nearly an hour with artificial respiration. Certain experiences seem to indicate the possibility that trephining and puncture of the ventricle might supplement artificial respiration and save the patient. The primary paralysis of respiration may be due to disturbance of the hydrostatic balance with consequent injury of the respiration center or its conducting fibers. The heart action subsides very gradually. In the cadaver, the cavities of the central nervous system toward the brain from the tumor were found enlarged, while toward the spinal cord they were smaller than usual. The point of obstruction between the cerebral and spinal lymph was either at the aqueduct—due to the direct pressure of the tumor—or at the foramen of Majendie, from a plug of cerebellum having been forced into the opening.

Muenchener Medicinische Wochenschrift, June 5 and 12.

Changes in Urine After Palpation of Kidney. C. MENGE.—In fourteen out of twenty-one cases of nephroptosis, investigation with palpation of the kidney caused the appearance of slight, transient albuminuria and hematuria, leading to erroneous deductions in respect to the prognosis until it was noticed that the urine had returned to normal when examined the next day and afterward. In Menge's experience nephroptosis and chronic anemia are frequently associated in young girls and mutiparæ. This suggests a connection between the anemia and the slight albuminuria and hematuria, which is possibly induced by the pressure of tight clothing on an abnormally exposed kidney, the same as by palpation. Cyclic and

intermittent albuminuria are most frequent at the age of rapid growth, especially in poorly nourished individuals. The albuminuria usually appears on rising after prolonged rest in bed, i. e., when the kidney descends and the pressure of the clothing is again experienced. All these morbid conditions are best influenced by protecting the kidneys against pressure from without. Massage of the kidneys and trusses with kidney pads should be avoided in nephroptosis.

Hemoglobinuria in Splenomegalic Icterus. BETTMANN.—The symptoms in the observation reported corresponded to Hayem's "chronic, infectious splenomegalic icterus," but there was also occasional, intermittent hematuria. The affection had commenced in childhood; the icterus was pronounced and chronic, the liver apparently normal on auscultation and palpation, but the spleen measured 16 by 27 cm. The exacerbations of the icterus were always consecutive to excesses in eating or drinking, emotions, physical exertion, such as marching or dancing, or to cold. This sequence suggested paroxysmal hemoglobinuria and hemoglobinemia as important factors in the etiology of the affction. The primary cause is possibly a congenital idiosyncrasy of the blood, allowing the more or less continuous passage of small amounts of hemoglobin into the serum. They are disposed of in the organism and do not pass into the urine except under certain rare circumstances. This hypothesis explains the exacerbations of the icterus and the hypertrophy of the spleen, which is evidently enlargement from deposits of the waste of the red corpuscles. No bile pigment was detected in the urine during the entire year of observation and the patient was subjectively well except during exacerbations, which were usually inaugurated with a chill and pains in the trunk and extremities. [Gilbert and Fournier have recently described a somewhat similar case of what they call hypersplenomegalic biliary cirrhosis, characterized by chronic icterus, enormously hypertrophied spleen and comparatively slight enlargement of the liver. They attribute the etiology to an ascending, infectious angiocholitis, primarily a biliary affection due to invasion of the intrahepatic passages by intestinal micro-organisms. The spleen may increase to a length of 30 cm. Hepatic colic was the first manifestation. See THE JOURNAL, xxxiv, 1675.—ED.]

Calcium Carbid in Carcinoma of Uterus. W. GRUSDEW.—Scarcely a day passes that a patient with inoperable carcinoma of the uterus is not brought to Grusdew's clinic. The more extensive his experience, the higher is his appreciation of calcium carbid as a palliative measure in these cases. He places one or two pieces of the carbid, the size of a hazel-nut, on the neoplasm and packs the vagina with gauze tampons over a cotton wad, protecting the vaginal walls from the chemical action, which consists in the generation of acetylene, etc. The vagina is not packed so tightly as to interfere with micturition or escape of the gas. The patient is then dismissed. In one to three days the vagina is rinsed out, and the application is renewed, whenever hemorrhage or fetid discharges render it necessary. One application transforms the surface of the neoplasm into a clean wound which bleeds very little if at all. The secretion is diminished and rendered odorless and there is no danger connected with the treatment if ordinary precautions are observed. Grusdew recommends it as a preliminary measure to cleanse the surface of the carcinoma before cauterizing, and he has found it extremely beneficial in curing erosions and benign ulcerations of the vaginal portion of the uterus In the latter case it is applied in the form of powder.

The Public Service.

ARMY CHANGES.

Movements of Army Medical Officers under orders from the Adjutant General's Office, Washington, D. C., June 7 to 21, 1900, inclusive:

William Alden, acting asst.-surgeon, from Lynn, Mass., to duty in the Department of California.

Bailey K. Ashford, lieutenant and asst.-surgeon, U. S. Army, from Washington Barracks, D. C., to duty at Fort Slocum, N. Y.

Lewis Balch, major and surgeon, Vols., honorably discharged from the service, to take effect July 15, 1900.

Edmund Barry, acting asst.-surgeon, from Fort Wadsworth to Fort Slocum, N. Y., to accompany recruits to San Francisco, Cal., and return to his proper station.

Robert M. Blanchard, acting asst.-surgeon, from Batavia, Ohio, to duty in the Department of California.

Madison H. Bowman, asting asst.-surgeon, from Toledo, Ohio, to duty in the Department of California.

Louis Brechemin, major and surgeon, U. S. A., sick-leave extended.

Charles E. Bruuhl, acting asst.-surgeon, from Waco, Texas, to Tampa, Fla., and thence to Havana, Cuba, for assignment.

Edward C. Carter, major and surgeon, U. S. A., member of an examining board at Washington, D. C.

Robert P. Cooke, acting asst.-surgeon, from Boyce, Va., to Tampa, Fla., and thence to Havana, Cuba, for assignment.

Orlando Ducker, major and surgeon, Vols., leave of absence granted; relieved from further duty in the Division of Cuba, and on expiration of his leave of absence to report at San Francisco, for duty in the department of California.

Arthur M. Fraser, acting asst.-surgeon, from Washington, D. C., to New York City, to join the transport *Crook*

Leigh A. Fuller, lieutenant and asst.-surgeon, U. S. A., from Fort Monroe, Va., to report to the commanding general, Deparment of California, for further orders.

Edward F. Gettings, acting asst.-surgeon, from duty at Fort Hood, N. Y., to proceed by the first available transport to Santiago, Cuba.

Frederick F. Jenkins, acting asst.-surgeon, from Carbondale, Pa., to duty in the Department of California.

Frank R. Keefer, major and surgeon, Vols., having tendered his resignation, is honorably discharged from the volunteer service, to take effect June 15, 1900. As captain and asst.-surgeon, U. S. A., leave of absence is granted, on the expiration of which he is required to report for duty at Fort Monroe, Va.

James C. Merrill, major and surgeon, U. S. A., member of an examining board at Washington, D. C.

Albert Moser, acting asst.-surgeon, from Lima, Ohio, to the Department of California.

Edward L. Munson, captain and asst.-surgeon, U. S. A., member of an examining board at Washington, D. C.

Eduardo C. Poey, acting asst.-surgeon, from temporary duty at Fort Riley, Kans., to accompany a detachment of the 6th U. S. Cavalry to Manila, P. I., and on arrival to report for duty in the Division of the Philippines.

William W. Quinton, captain and asst.-surgeon, U. S. A., from New York City, to duty at Fort Ethan Allen, Vt.

Charles J. Rowan, acting asst.-surgeon, from Chicago, Ill., to the Department of California.

Louis S. Tesson, major and surgeon, U. S. A., from Fort Ethan Allen, Vt., to duty at Vancouver Barracks, Wash.

Harry H. Van Kirk, acting asst.-surgeon, from Sunbury, Ohio, to the Department of California.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

NAVY CHANGES.

Changes in the Medical Corps of the U. S. Navy for the week ending June 23, 1900.

P. A. Surgeon A. R. Alfred, detached from the *Texas* and ordered to the Asiatic Station, via the *Nippon Maru* sailing from San Francisco, Cal., July 10.

P. A. Surgeon G. A. Lung, order of May 25, modified; ordered to the Cavite naval station.

The following are commissioned assistant-surgeons, to take rank from June 7, 1900, in the order named: J. J. Snyder, H. A. Dunn, A. Stuart, E. M. Blackwell, W. H. Ulsh, M. V. Stone, C. R. Burr, G. F. Freeman, R. O. Marcour, J. K. Payne, Jr., J. Stepp, C. H. DeLancy, F. M. Bogan, R. K. McClanahan, W. E. G. High.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the 7 days ending June 21, 1900.

Surgeon H. R. Carter, detailed as chief quarantine officer of the Island of Cuba.

Surgeon A. H. Glennan, relieved from duty at New Orleans, La., and directed to proceed to Havana, Cuba, via Washington, D. C., and New York City, and report to Surgeon H. R. Carter for duty.

Surgeon Eugene Wasdin, granted leave of absence for 10 days from June 21.

Surgeon G. M. Magruder, upon being relieved from duty at London, England, to proceed to Memphis, Tenn., and assume command of the service.

P. A. Surgeon A. C. Smith, relieved from duty at Hamburg, Germany, and directed to proceed to New York City, and report by wire for orders.

P. A. Surgeon Rupert Blue, relieved from duty at Genoa, Italy, and directed to proceed to New York City, and report by wire for orders.

P. A. Surgeon J. H. Oakley, relieved from duty at Queenstown (Cork), Ireland, and directed to proceed to Evansville, Ind., and assume command of the service.

P. A. Surgeon E. K. Sprague, relieved from duty at Antwerp, Belgium, and directed to proceed to Detroit, Mich., and report to medical officer in command for duty and assignment to quarters.

P. A. Surgeon A. R. Thomas, relieved from duty at Rotterdam, Netherlands, and directed to proceed to London, England, and de-

tailed for duty in the office of the U. S. Consul-General at that place.

P. A. Surgeon H. W. Vickes, relieved from duty at Glasgow, Scotland, and directed to proceed to Cincinnati, Ohio, and assume command of the service.

P. A. Surgeon J. B. Greene, relieved from duty at Bremen, Germany, and detailed for duty in the office of the U. S. Consul-General at Berlin, Germany.

Asst.-Surgeon H. S. Grubbs, relieved from duty at Havre, France, and detailed for duty in the office of the U. S. Consul-General at Paris, France.

Asst.-Surgeon H. B. Parker, upon being relieved from duty at Santiago, Cuba, to proceed to New Orleans, La., and report to medical officer in command for duty and assignment to quarters.

Asst.-Surgeon R. H. Von Ezdorf, relieved from duty at Savannah, Ga., and detailed as quarantine officer at the port of Santiago, Cuba, proceeding to station via Washington, D. C. and New York City.

Asst.-Surgeon J. F. Anderson, relieved from duty at Marseilles, France, and detailed for duty in the office of the U. S. Consul-General at Vienna, Austria.

Asst.-Surgeon W. C. Hobdy, relieved from duty at Southampton, England, and directed to proceed to New York City, and report by wire for orders.

Asst.-Surgeon J. W. Schereschewsky, directed to assume temporary command of the service at New Orleans, La.

Acting Asst.-Surgeon W. H. Marsh, granted leave of absence for 18 days from June 5.

Acting Asst.-Surgeon W. C. Mason, granted leave of absence for 5 days from June 24.

Hospital Steward W. F. Schlaar, relieved f rom duty at the port of Washington, D. C., and directed to report to Surgeon L. L. Williams, Immigration Depot, New York City for duty.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Marine-Hospital Service, during the week ended June 23, 1900:

SMALLPOX—UNITED STATES

District of Columbia: Washington, June 9-16, 8 cases.
Illinois: Cairo, June 2-9, 1 case.
Indiana: Evansville, June 8-16, 2 cases.
Iowa: Ottumwa, April 28 to May 5, 1 case.
Kentucky: Covington, June 8-16, 9 cases.
Louisiana: New Orleans, June 8-16, 35 cases, 6 deaths; Shreveport, June 2-9, 5 cases.
Massachusetts: Fall River, June 8-16, 3 cases; Lowell, June 8-16, 3 cases.
Michigan: Grand Rapids, June 8-16, 2 cases.
Minnesota: Minneapolis, May 26 to June 9, 26 cases, 1 death.
New Hampshire: Manchester, June 8-16, 9 cases.
Ohio: Cleveland, June 8-16, 28 cases, 2 deaths; Youngstown, June 8-16, 1 case.
Pennsylvania: Pittsburg, June 8-16, 2 cases.
Porto Rico: Ponce, May 27 to June 4, 1 case.
South Carolina: Greenville, June 8-16, 2 cases.
Utah: Ogden, May 1-31, 3 cases; Salt Lake City, June 8-16, 5 cases.
Washington: Spokane, June 8-16, 1 case.
West Virginia: Charlestown, June12, 10 cases.

SMALLPOX—FOREIGN.

Austria: Prague, May 28 to June 2, 11 cases.
Belgium: Antwerp, May 19-26, 1 case, 3 deaths.
Brazil: Rio de Janeiro, April 13 to May 11, 18 deaths.
Canada: Montreal, June 4, 30 cases.
England: Liverpool, May 26 to June 2, 2 cases; London, May 26 to June 2, 7 cases.
France: Nice, May 26 to June 6, 3 cases; Paris, May 26 to June 2, 1 death.
Germany: Stettin, May 19-26, 1 case.
Gibraltar: May 20-29, 4 cases.
Greece: Athens, May 19-26, 4 cases, 2 deaths.
India: Bombay, May 8-13, 24 deaths; Kurrachee, May 6-13, 11 cases, 9 deaths; Madras, May 5-11, 1 death.
Mexico: Chihuahua, June 2-9, 2 deaths; Vera Cruz, June 2-9, 2 deaths.
Philippines: Manila, April 28 to May 5, 2 cases.
Russia: Moscow, May 19-26, 9 cases, 4 deaths; Odessa, May 26 to June 2, 11 cases, 1 death; St. Petersburg, May 19-26, 33 cases, 12 deaths; Warsaw, May 12-19, 2 deaths.
Spain: Corunna, May 26 to June 2, 1 death; Madrid, May 5-19, 21 deaths.
Straits Settlements: Singapore, April 26 to May 5, 5 deaths.
Uruguay: Montivideo, April 21 to May 5, 2 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, April 13 to May 11, 46 deaths.
Colombia: Barranquilla, May 26 to June 2, 5 cases, 3 deaths.
Cuba: Havana, June 2-9, 2 deaths.
Mexico: Laguna, 16, present; Vera Cruz, June 2-9, 17 cases, 10 deaths.

CHOLERA.

India: Bombay, May 8-15, 15 deaths; Kurrachee, May 6-13; 2 cases; Madras, May 5-11, 1 death.

PLAGUE.

India: Bombay, May 8-15, 304 deaths; Kurrachee, May 6-13, 178 cases, 134 deaths.
Japan: Osaka, May 13-25, 6 cases; Shidzuoka, May 14-17, 3 cases.
Philippines: Manila, April 28 to May 5, 9 cases, 7 deaths.

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